

No. 34128-0-II

IN THE COURT OF APPEALS
OF THE STATE OF WASHINGTON
DIVISION II

THURSTON COUNTY, a municipal corporation and political subdivision
of the State of Washington, and BLACK HILLS AUDUBON SOCIETY,
INC. a Washington nonprofit corporation,

Appellants/Cross-Respondents,

VS.

QUALITY ROCK PRODUCTS, INC. a Washington Corporation, and
EUCON CORPORATION, an Idaho Corporation,

Respondents/Cross-Appellants.

[illegible]

CORRECTED

**RESPONDENTS/CROSS-APPELLANTS QUALITY ROCK
PRODUCTS, INC. & EUCON CORPORATION'S RESPONSE TO
APPEAL FROM THURSTON COUNTY AND BLACK HILLS
AUDUBON SOCIETY AND BRIEF ON CROSS-APPEAL**

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I. INTRODUCTION

This appeal involves Quality Rock Products, Inc. and Eucon Corporation's ("QRP") application to expand operations at its existing mineral extraction mine, which has been used approximately 20 years for sand and gravel mining. A portion of the mined property has been specifically designated by the County as valuable and protected mineral resource land.

Consistent with the historical mining on the property, QRP's expansion request was submitted to Thurston County ("County") and deemed to be consistent with the County's Code and Comprehensive Plan by the County's Staff ("Staff") and Hearing Examiner ("Examiner") on two separate occasions.

Despite this, the Thurston County Board of County Commissioners ("Board") denied QRP's mining expansion application. The Board's decision was not based on the entire record created by the Examiner; the standards established under the County's Code; in law or fact, but rather on political pressure to deny the expansion, and as such should be invalidated by this Court.

II. STATEMENT OF ISSUES/ASSIGNMENT OF ERRORS

A. Response to Appeal - Statement of Issues.¹

1. Whether the Board's Decision concluding that, "the proposed location for the gravel mine is not appropriate due to the gravel mining operations' significant adverse impacts on the surrounding sensitive environment" is: (a) an erroneous interpretation of the law after allowing for due deference to the Examiner; (b) clearly erroneous; or (c) supported by evidence that is substantial when viewed in light of the whole record?

2. Whether the Examiner's approval of QRP's project was supported by evidence that is substantial when viewed in light of the entire record?

3. Whether the Board engaged in unlawful procedure or failed to follow a prescribed process when they disregarded the County's Special Use Permit ("SUP") criteria, and the majority of the facts and conclusions established by the Examiner to arrive at their own conclusion that water quality impacts had not been addressed?

4. Whether the Board's conclusion that "the proposed mitigation to install monitoring wells and study in five years does not sufficiently mitigate the undisputed impacts of the proposed project due to the sensitivity of the Black River and surrounding area," is an erroneous

¹ RAP 10.3(b) provides that a statement of the issues need not be made if respondent is satisfied with the statement in the appellant's brief. QRP does not agree with the statement of issues presented by either the County or BHAS.

interpretation of law or an erroneous application of the law to the facts, or is based on evidence which is substantial when viewed in light of the whole record?

5. Whether the Board's Decision that, "the proposed gravel mine is not consistent with the comprehensive plan policies on the natural environment," was based on evidence which is substantial when viewed in light of the whole record, or is an erroneous interpretation of the law after allowing for due deference to the Examiner?

B. QRP's Cross Appeal - Assignments of Error.

1. The Trial Court entered a final order (CP 115-117) in this matter on October 24, 2005, which held that the Board's actions were not arbitrary, capricious or unlawful and that QRP thus is not entitled to damages and attorneys' fees pursuant to 42 USC §§ 1983-1988 and/or RCW 64.40.020; QRP's claim for declaratory judgment is rendered moot by the Court's Order reinstating the Examiner's decision in full; there was substantial evidence in the record supporting the Examiner's decision; overruled the Board's reversal of the Examiner's decision and reinstated the Examiner's decision in full.

2. The Trial Court erred in finding the actions of the Board were not arbitrary, capricious or unlawful.

3. The Trial Court erred in determining that QRP is not entitled to

a trial on their claim for damages and attorneys' fees.

4. The Trial Court erred in not deciding QRP's Motion for Declaratory Judgment.

5. This Court's Commissioners denied QRP's Motion to Amend Its Cross-Appeal. If this Court reverses the Trial Court and reinstates the Board's decision, then QRP could be left with no access to its ongoing mining operation.

C. Statement of Issues Pertaining to Assignment of Errors on Cross Appeal.

1. Did the Board act arbitrarily, capriciously or unlawfully in reversing the Examiner's decision and denying QRP's requested permit?

2. Is QRP entitled to a hearing on the claims it brought for damages and attorneys' fees pursuant to 42 USC §§ 1983-1988 and RCW 64.40.020? Are these claims separate and independent of the LUPA appeal?

3. The County has refused to issue a permit for an asphalt batch plant that was approved by the Examiner, was not appealed by the County or the Black Hills Audubon Society ("BHAS"). Does this refusal constitute a violation of QRP's constitutional rights as a deprivation of property entitling it to a trial on the damages it suffered as a result of the refusal? Did the Trial Court err in determining that this issue was rendered moot?

4. Concerning QRP's Motion To Amend The Cross-Motion Of Appeal (filed with this Court): If the Court reverses the Trial Court and reinstates the Board's Decision, then QRP would be in the prejudicial position of having this development application denied and could potentially be precluded from using 88th Avenue Southwest as a truck access for its existing operations regardless of the future development of the site. This could in fact, put QRP out of business. Should the Court reconsider the Commissioner's denial of the Motion to Amend?

III. STATEMENT OF THE CASE

A. History and Description of the Property.

QRP's property and existing mining operation is located in unincorporated Thurston County, at 4741 88th Avenue SW, Tumwater, Washington, which is east of the Black River ("Property" or "Littlerock Mine"). (AR 601) Mining at the Littlerock Mine has occurred for approximately 20 years. (AR 359) In 1985, the County granted the previous owners of the Property a Limited Use Permit to extract minerals from 26-acres of the 151-acre Property and to operate a portable crusher/classifier. In 1986, the County approved a permit amendment that allowed a dry cement batch plant on the Property. (AR 601)

The County designated the 26-acres currently mined at the Littlerock Mine as Mineral Resource Land of Long Term Commercial

Significance. Directly west of the Property is the Hardrock Mine, which the County also designated as a Mineral Resource Land of Long Term Commercial Significance. In 1989, the County granted the owners of the Hardrock Mine permits to mine 80 acres, despite the fact that the mine is located entirely within the Black River Wildlife Refuge (“Refuge”).²

The Property is surrounded on three sides by privately owned property. The Hardrock Mine separates the Property from any of the publicly owned portions of the Refuge.³

There is an existing well on site currently used as an approved public water system for the mining operation. (AR 667) Under state law, QRP has the right to withdraw up to 5,000 gallons of groundwater per day for its mine operations. RCW 90.44.050.

B. General Description of Mining.

Essentially the process involves digging a large hole in the ground, and then removing, sorting, washing and crushing the rock into various sizes. No blasting is involved.

Mineral extraction below the water table occurs frequently.

² AR 606. The Hardrock Mine is owned by Respondent Eucon Corporation. The Hardrock Mine is permitted under Thurston County SUP-16-88.

³ AR 601. While the United States Fish and Wildlife Service (USFW) may have “designated” the Hardrock Mine as being within the Refuge, it has not acquired the property, or the other two privately owned properties flanking the Property. The USFW has “designated” 3,800 acres as being part of the Refuge, but has only actually acquired 800 acres. AR 336.

Essentially sand and gravel that the water is passing through is removed. At some point, this changes the subsurface groundwater flow into a surface water flow condition resulting in a “pit lake”. The water continues to flow through and ultimately reaches its previous destination.⁴

C. **The County’s Zoning Code and Comprehensive Plan Permit Mining on the Property.**

QRP’s request to expand its existing gravel mining operation on the Property is consistent with the County’s zoning code and Comprehensive Plan. Rural Residential Resource is defined as:

Primary land uses in the one unit per five acre areas are resource-oriented (farming, forestry, mineral extraction) and open space. Residential use may be limited due to physical land capability constraints.⁵

TCC 20.30B.010 describes the purpose of this designation as follows:

The requirements and procedures are designed to conserve long-term commercially significant mineral lands and to minimize land use conflicts by **allowing designation status only where a long-term mining operation would be compatible with surrounding land uses** and by providing notifications to surrounding property owners of the long-term nature of a designated mining operation.

⁴ A study entitled *The Direct and Cumulative Effects of Gravel Mining on Ground Water within Thurston County, Washington*, prepared by Thurston County Hydrogeologist Robert Mead, is an exhibit from the administrative record in this matter and an excellent resource on gravel mining. AR 2341. Mr. Mead’s study has been attached as Appendix 1 to this Brief. To avoid confusion, citation to the study will be to the AR pagination.

⁵ AR 354 (emphasis added). The applicable sections of the Thurston County Code (“TCC”) have been attached hereto as Appendix 2.

(Emphasis added). This designation affords special protection to mineral extraction activities; however a SUP is still required for extraction activities. (AR 355)

D. The County's SUP Standards.

The County's Board adopted TCC 20.54.015, which sets forth the applicable SUP standards.

E. QRP's SUP Application.

On August 14, 2000, QRP submitted an application for a SUP to expand the existing 26-acre mining operation to include the entire 151-acre site, replace the concrete batch plant approved under the 1986 permit, install a new hot mix asphalt batch plant, and recycle concrete and asphalt.⁶

QRP's proposed gravel mining expansion would occur in several phases. Phases 1-3 would consist of excavation above the groundwater table. (AR 336) Phases 4-6 would consist of excavation below the groundwater table, lowering the floor of the pit approximately 60 feet, or 40 feet below the groundwater table (AR 336) creating a 75-acre lake.

QRP's SUP application also required: (1) a Washington State Department of Natural Resources (DNR) approval of a reclamation plan

⁶ AR 599. The Staff concluded that the 1986 approval of the concrete batch plant was still valid.

for the site (AR 335; AR 606); (2) an Olympic Air Pollution Authority (“OAPCA”) preliminary approval of the asphalt batch plant (AR 687-722); (3) a May 1, 2002 NPDES permit from the Department of Ecology (“Ecology”). The NPDES permit will not allow a water quality impaired stream to be negatively affected by the issuance of a permit. (AR 2529-2580)

F. The County’s Environmental Review of the Project.

Pursuant to the State Environmental Policy Act (“SEPA”), the County’s Responsible Official (“RO”) was required by state law to review the potential environmental impacts of the project. This review required assessment of impacts to groundwater and its movement, quantity and quality.⁷ The County received 73 comments relating to the MDNS, including comments from BHAS. On October 4, 2001, the County’s RO determined:

Thurston County Development Services has determined that it [the project] **does not have a probable significant adverse impact upon the environment**. An Environmental Impact Statement **is not** required under RCW 43.21C.030(2)(C). (Emphasis supplied and Emphasis added) (AR 631)

Based on this assessment, the County issued a Mitigated Determination of Non-significance (“MDNS”) with 26 conditions to mitigate impacts.⁸

⁷ WAC 197-11-444(1)(c) lists the elements of the environment which must be included in SEPA review, including “ground water movement/quantity/quality”.

⁸ AR 631. The MDNS has been attached as Appendix 3.

In its written comments, BHAS cited to a study authored by County-employed hydrogeologist, Robert Mead.⁹ However, BHAS omitted the general conclusion of Mr. Mead's study that gravel mining, in general, "poses low to moderate risks to ground water quality and quantity. But adequate regulatory oversight of project design and approval, operation, monitoring and closure, and adequate enforcement are necessary if risks are to be kept to an acceptable level." (AR 2363) BHAS did not appeal the MDNS (nor did any party), and it became a final and binding decision on October 25, 2001.¹⁰

Among the 26 conditions in the MDNS are: Condition No. 13 specifically details how QRP was required to provide "Aquifer Protection", including the full implementation of a Hydrological Report; Condition No. 14 required QRP to develop and implement a Ground Water Monitoring Plan (AR 634); Condition Nos. 15 and 16 required ground water testing and "water quality and water level monitoring" prior to the start of site operations, and "quarterly for the first two years."¹¹

⁹ AR 845. The study is located at Appendix 1; AR 2341.

¹⁰ AR 602. One written comment raised the issue that the expansion and "the creation of a 75-acre artificial lake is likely to significantly impact the groundwater flowing to the Black River a mere half mile away." AR 609.

¹¹ AR 634. After the first two years of monitoring, the MDNS required semi-annual monitoring.

Mr. Mead (the expert relied upon by BHAS in its written comments), reviewed the maps and geological cross sections submitted by QRP's consultants, and opined:

I do not expect that this expansion will have any significant adverse effect on ground or surface water. **As material is excavated from the pit, water will be temporarily drawn from the surrounding area, including the Black River. This effect will be temporary, and will be balanced by the long-term effect of increased storage in the excavated pit.** The increased storage will **slightly** reduce variations in the local water table. A **small** amount of additional water will be lost through evaporation, but this will be **largely balanced** by reduced evapotranspiration from plants now covering the expansion area.

The Qva material contains sufficient fines, and the gradient is shallow enough that turbidity is not expected to be transported offsite. The adjacent wetland will absorb and filter any minor turbidity that might leave the site. **The expansion itself should not produce any significant adverse effect on water quality.**¹²

One of QRP's consultants, SubTerra Inc. ("SubTerra") also performed tests relating to ground water, and reached the same conclusions.¹³

Staff reviewed all aspects of the Project and its impacts and recommended that the Project be approved, subject to "substantial" mitigating conditions.¹⁴ (AR 2380)

¹² AR 671-72 (emphasis added). "Qva" relates to advance outwash from the Vashon Stade glaciations, as well as the soils derived from these deposits. AR 2499.

¹³ SubTerra's opinion was submitted in response to a Mace G. Barron, Ecologist for BHAS. AR 2174.

G. The Examiner's Review of the SUP.

The Examiner held public hearings on QRP's SUP application on November 19, December 10, 2001, February 5 and February 11, 2002. (AR 323) The Examiner heard testimony from 50 people, and admitted 62 exhibits into the record.¹⁵

On April 5, 2002, the Examiner approved the SUP, subject to numerous conditions, including those conditions required by the MDNS ("First HE Decision"). (AR 359-362) BHAS appealed the First HE Decision to the County's Board.

H. The Remand.

The Board voted 2 to 1 to vacate the First HE Decision and remanded it to the Examiner for additional consideration of four issues: (1) Water quality; (2) Traffic safety; (3) Designation of Mineral Resource Lands; and (4) Status of and compliance with 1985 and 1986 permits ("Remand Order"). (AR 3223-3227) Of significance to this appeal, the Remand Order instructed the Examiner to reassess water impacts:

Based on the above findings, conclusions and conditions, a majority of the Board determined that this case needed to be remanded to the hearing examiner for the purpose of conducting a detailed analysis of the impact to the

¹⁴ In their written comments, BHAS admitted that the conditions imposed by the MDNS were "substantial proposed mitigation". AR 842.

¹⁵ AR 323-325. Many of the exhibits had numerous attachments. For example, Exhibit 1 included 21 attachments; Exhibit 8 included 56 comment letters and Exhibit 30 included 39 comment letters. AR 325-334.

groundwater, aquifer, and the Black River, called for in Condition Y, prior to the issuance of the SUP (AR 3224)

In response to the Remand Order, Staff required QRP to address the issues relating to the project's potential impacts to groundwater, the aquifer and the Black River. QRP performed the "detailed analysis" requested by the Board when it submitted a Hydrological Report consistent with County Code requirements. TCC 17.20.200(E) defines the parameters of a "Hydrological Report" and identifies the required detailed water analysis for mining operations.

Under its code, the Board gave discretion and authority to the Thurston County Health Department to review studies and dictate the parameters and adequacy of those studies. Accordingly, Staff reviewed the content of QRP's additional water studies, and confirmed that QRP had "conducted additional studies and submitted the results for review." (AR 2474) Mr. Mead reviewed the new water studies "and determined that the new information adequately addressed the issues that were remanded to the Examiner for further consideration." (AR 2474)

Staff concluded that the new information "validates the previous findings related to ground water", but still recommended an additional condition for ground water protection. After reviewing the additional detailed analysis, Staff again recommended approval of the SUP. (AR 2478)

On remand, the Examiner heard two additional days of testimony, and the record was expanded from 62 to 92 exhibits. (CP 480-483) The material submitted by QRP included two studies performed by Pacific Groundwater Group (“PGG”).¹⁶

The first PGG study, dated October 2002, was designed to ensure compliance with the requirements contained in TCC 17.20.200. The information pertinent to this appeal included: groundwater elevations;¹⁷ the proposed depth of excavation;¹⁸ analysis of background water quality if an aquifer will be intercepted;¹⁹ turbidity analysis;²⁰ and the estimated effects of stormwater and process water.²¹

The second PGG study, dated January 2003, was performed to respond to concerns which are not issues in this appeal.

On remand, only QRP submitted any independent studies on water impacts. After reviewing the detailed analysis on potential water impacts, the Examiner again approved the SUP subject to numerous conditions,

¹⁶ AR 2492-2528 and 2655-2676. The PGG Hydrogeological Report has been attached as Appendix 4. Citation to the report will be to the AP pagination.

¹⁷ AR 1813 (Exhibit 25, Figure 11); AR 2501 (Exhibit 66, page 5); AR 2515 (Exhibit 66, Figure 4); AR 2517 (Exhibit 66, Table 1); AR 2660-2676 (Exhibit 82, pp. 3-4, Tables 1, 2 and 3, and Figures 2 and 3).

¹⁸ AR 1713, 1811 (Exhibit 25, p. 2 and Figure 9).

¹⁹ AR 2508, 2519 (Exhibit 66, p. 12 and Table 4 “Field Measured Groundwater Quality Parameters in Monitoring Wells at Littlerock (Fairview) Mine.”).

²⁰ AR 2509, 2519 (Exhibit 66, p. 13 and Table 4).

including those conditions required by the MDNS. (“Second HE Decision”).²² BHAS appealed a second time to the Board.

I. The Board's Decision.

On August 4, 2003, the Board held a public hearing on the SUP application, and supported by the applause of a very large audience,²³ voted 3-0 to reverse the Examiner and deny the SUP. On August 13, 2003, the Board issued the decision that is the subject of this appeal (“Board Decision”).²⁴ Without reviewing the entirety of the factual record created by the Examiner, the Board concluded:

Based on the above record, the Board determined that the (1) the 1985 and 1986 permits were still valid and had not been abandoned; and (2) the proposed location for the gravel mine is **not** appropriate due to the gravel mining operations' significant adverse impacts on the surrounding sensitive environment; (3) the proposed gravel mine is not consistent with the comprehensive plan policies on the natural environment; and (3) (sic) if the SUP is approved on appeal in superior court all truck traffic on 88th avenue should be prohibited due to safety issues. (Emphasis in original) (CP 475)

QRP timely appealed the Board’s decision to Superior Court pursuant to a Land Use Petition and Complaint Including Claims for

²¹ AR 666-670 (Exhibit 1, Attachment n); AR 1658-1665 (Exhibit 21); AR 2174-2177 (Exhibit 32, January 7, 2002 SubTerra Letter); AR 1720 (Exhibit 25, p. 11); AR 2509 (Exhibit 66, p. 13).

²² AR 55-59. The Second HE Decision, which include the revisions to the First HE Decision has been attached as Appendix 5.

²³ Verbatim Report (“VR”), Transcript of Board Proceedings (April 4, 2003, page 14, line 23 “(Audience applause)”.

Money Damages and Declaratory Relief (“Complaint”).²⁵ After a hearing on the matter, the Superior Court reversed the Board, reinstated the Examiner’s decision and ordered the County to issue the SUP.²⁶

The County and BHAS appealed the Superior Court’s decision to this Court. (CP 17, 10) QRP cross-appealed the Superior Court’s decision to deny its claims for damages under 42 U.S.C. §§ 1983-88 and RCW 64.40 and its failure to rule on its motion for declaratory judgment. (CP 3)

IV. ARGUMENT

A. Standard of Review.

LUPA governs judicial review of land use decisions. *Tahoma Audubon Society v. Park Junction Partners*, 128 Wn. App. 671, 680, 116 P.3d 1046 (2005). When reviewing an administrative decision, this Court stands in the shoes of the superior court. *Wenatchee Sportsmen Ass’n v. Chelan County*, 141 Wn.2d 169, 176, 4 P.3d 123 (2000). Thus, the Court will limit its review to the record before the administrative tribunal. *HJS Dev., Inc. v. Pierce County*, 148 Wn.2d 451, 483-84, 61 P.3d 1141 (2003).

²⁴ AR 3229. The Board’s Decision has been attached hereto as Appendix 6.

²⁵ CP 460. Prior to the LUPA hearing, this case was the subject of a procedural challenge by the County regarding timely service of the LUPA petition. The matter was resolved in QRP’s favor in the case of *Quality Rock v. Thurston County*, 126 Wn. App. 250, 108 P.3d 805 (2005).

²⁶ CP 32. Quality Rock acknowledges that the superior court’s findings and conclusions are not relevant on appeal. *Isla Verde Int’l Holdings, Inc. v. City of Camas*, 146 Wn.2d 740, 751, 49 P.3d 876 (2002).

The party seeking relief from a land use decision must establish one of the errors set forth in RCW 36.70C.130(1). This burden remains with the petitioning party on appeal, even if that party prevailed on its LUPA claim. *Tahoma Audubon Society v. Park Junction Partners*, 128 Wn. App. 671, 681, 116 P.3d 1046 (2005).

Under LUPA, the Court reviews questions of law *de novo*, based on the administrative record. *Young v. Pierce County*, 120 Wn. App. 175, 181, 84 P.3d 927 (2004). The Court will find that the Board made a clearly erroneous application of law only if it is left with the firm conviction that is made a mistake. *Lakeside v. Thurston County*, 119 Wn. App. 886, 894, 83 P.3d 433 (2004) *rev. denied* 152 Wn.2d 1015, 101 P.3d 107 (2004).

The Court reviews the decision of the County's Board, as it was the local jurisdiction's highest level of authority to make the determination. RCW 36.70C.020(1). However, if the Board acted as an appellate body with its determination based solely on the original record, "it is not empowered to substitute its judgment for that of the hearing examiner, and it must sustain the examiner's findings of fact if they are supported by substantial evidence." *Maranatha Mining, Inc. v. Pierce County*, 59 Wn. App. 795, 801, 801 P.2d 985 (1990). The Board, acting as an appellate body in its review, was "bound by the hearing examiner's findings of fact." *Lakeside Indus., supra* at 894; *Maranatha, supra* at 802.

Factual issues are reviewed under the substantial evidence test. RCW 36.70C.130. Substantial evidence is a sufficient quantity of evidence to persuade a fair-minded person of the truth or correctness of the order. *City of Redmond v. Cent. Puget Sound Growth Mgmt. Hearings Bd.*, 136 Wn.2d 38, 46, 959 P.2d 1091 (1998). Substantial evidence is given “a highly deferential” standard of review. *Aarco Products Co. v. Washington Utilities and Transportation Commission*, 125 Wn.2d 805, 812, 888 P.2d 728 (1995). This deferential factual review requires the Court to view the evidence and the reasonable inferences in the light most favorable to the party who prevailed in the highest forum that exercised fact-finding authority. *Benchmark Land Co. v. City of Battle Ground*, 146 Wn.2d 685, 694, 49 P.3d 860 (2002).

Deferential factual review entails a process that necessarily includes “acceptance of the factfinder’s views regarding the credibility of witnesses and the weight to be given reasonable but competing inferences.” *Wells v. Water Dist. 10*, 105 Wn. App. 143, 160, 19 P.3d 453 (2001). In the present case, the Court should view the record and inferences in a light most favorable to QRP as it prevailed before the Examiner. The Examiner’s findings of fact should be considered verities on appeal. *Maranatha Mining*, 59 Wn. App. at 801.

B. The Board's Decision is Not Supported by Substantial Evidence When Viewed in Light of the Whole Record.

The record created by the Examiner, the County's highest fact-finder does not support the Board's Decision. In its appellate capacity,²⁷ the Board was "not empowered to substitute its judgment for that of the hearing examiner" and should have sustained the examiner's findings if they were supported by substantial evidence." *Maranatha Mining, Inc. v. Pierce County*, 59 Wn. App. at 801.

The Board's role is to review the record to determine whether it contained substantial evidence to support the decision of the Examiner. RCW 36.70B.060(3); *East Fork Hills Rural Association v. Clark County*, 92 Wn. App. 838, 965 P.2d 650 (1998). Therefore, the Board may only legally undertake to view the challenged decision and determine whether there was substantial evidence in the record to support it.

In the present matter, the Board improperly substituted its own judgment and preferences for that of the Examiner's. If more than one conclusion could have been drawn from the evidence, then the Board should have deferred to the Hearing Examiner. *Freeburg v. City of Seattle*, 71 Wn. App. 367, 371-72, 859 P.2d 610 (1993).²⁸

²⁷ TCC 2.06.050(B) and TCC 2.06.070 mandate a "final decision" by the Examiner followed by a "closed record appeal."

²⁸ The Board knew of its appellate obligations as they were reminded of them through by way of QRP's hearing memorandum AR 98-140, AR 99-103.

The Board disregarded its appellate obligation, and failed to review the factual record in its entirety. Instead, the Board simply extracted the few sentences from the Examiner's lengthy decision to justify its determination to deny the SUP. In doing so, the Board conspicuously ignored the remaining record, which demonstrated that the Examiner's decision to approve the SUP was supported by substantial evidence.

To demonstrate that the Board's actions were not based on substantial evidence or the entire record, QRP provides below a summary of the critical facts submitted to the Examiner relating to the project's potential water impacts:

1. PGG Submittals on Remand.

As indicated in its Remand Order, the Board was not satisfied with the analysis done on the potential impacts of the 75-acre lake to the groundwater, aquifer and Black River. QRP responded by hiring PGG, which submitted a report dated October, 2002, entitled "Hydrogeologic Analysis for Little Rock (Fairview) Aggregate Mine, Thurston County, Washington." ("PGG Report").²⁹

The County's response to the PGG Report, through its expert Mr. Mead, included the following statements: (1) "I have reviewed the materials submitted by the Applicants to address the issues raised on the

remand and find that they adequately address the Hearing Examiner's issues" (AR 2489); (2) "This information was consistent with earlier information developed for this project and can be considered conclusive" (AR 2489); and (3) "In essence, this new information validates the previous findings related to groundwater. With the exception of the condition given above, the conditions related to groundwater protection require no other changes." (AR 2490)

To understand why Mr. Mead reached these conclusions, it is critical to examine the contents of the report itself (something that the Board failed to do).

(a) Purpose and Methodology.

The PGG Report was performed in response to the Board's Remand Order and its direction for "detailed analysis." PGG described its methods (AR 2496) and then reported the substance of its findings.

Based on the methods, PGG described the regional geology, the local hydrogeology of the various units underneath and surrounding the mine site, the hydrology in the area, the potential effects of gravel mining on groundwater quantity (AR 2503) and quality. (AR 2508)

The PGG Report is much more detailed than the water analysis submitted by QRP's original consultants, SubTerra. While the water

²⁹ AR 2492-2528; Appendix 4.

analysis submitted by SubTerra arguably complied with the Hydrological Report requirements of TCC 17.20.200, the PGG Report goes well beyond those code requirements. PGG identified the following potential effects of the proposal:

- Changes to evapotranspiration at the pit lake site,
 - Changes to water table elevation from creation of additional storage in the pit lake compared to geologic materials,
 - Changes to water table elevation around pit lake,
 - Changes to groundwater flow and discharge patterns to Black River Valley in the vicinity of the pit lake.
- (AR 2503)

PGG then analyzed each of the effects. In doing so, PGG obtained data from a wide range of sources.

In addition to this data, PGG conducted an aquifer pumping test in August.³⁰ No aquifer pumping test is specifically required as part of the criteria of TCC 17.20.200.

To estimate the “evapotranspiration”, or the amount of groundwater that will return to the atmosphere due to the open lake condition, PGG utilized a Hydrologic Simulation Program FORTRAN (“HPSF”). The HPSF model was created by the Environmental Protection Agency. (VR 34 (11-13-02))

³⁰ AR 2500. The August pumping of the aquifer refutes the County’s and BHAS’s concerns that information relating to the most vulnerable time for groundwater recharge of the Black River (the summer months) had not been analyzed.

After determining what the evapotranspiration rate would be, PGG conducted further modeling to determine “Hydrologic and Hydraulic Changes Due to Mine Expansion.” (AR 2505) This time PGG utilized a GFLOW2000 model. (AR 2505) At the hearing, a Mr. Wildrick described the GFLOW2000 model. (VR 11-13-02 at 48) The Examiner accepted the analysis of the GFLOW2000 model because of its ability to more accurately predict the impacts of the proposal. (AR 045 (Finding 19))

(b) Water Quantity Findings. PGG also estimated the water level or “head” changes that would be potentially caused by the project. Figure 5 to the PGG Report (AR 2516) shows that the water levels east and upgradient will be slightly lower, and the water levels west and downgradient will be slightly higher. PGG further finds, “[m]odeled change in water level at the nearby water supply wells is in all cases less than 1.7 feet.” (AR 2507)

After estimating the localized effects of the project, PGG moved on to answer one of the Board’s primary questions; namely the “Estimated Changes in Groundwater Discharge to the Black River Valley.” (AR 2507) Using the information obtained about the hydrology from the pumping tests and modeling PGG estimated the effects using the “Darcy Equation.” PGG found that:

The calculations indicate that groundwater discharge

through the Qva aquifer toward the Black River beneath the location of the proposed pit lake is in the range of 0.36 to 0.65 cfs, for the range of assumed hydraulic gradients. Therefore, the estimated reduction in groundwater recharge at the pit lake of 0.032 cfs would be approximately 5 to 9% of the current groundwater flow beneath the mine. This change is equivalent to the withdrawal of a few domestic wells. **In comparison to the water budget of the Black River valley, however, the change is extremely small.** For comparison, the flow in the Black River at Littlerock (128th Avenue Bridge) ranges from seven to more than 400 cfs, based on gaging by Thurston County from November 1991 to April 1998. (Emphasis added) (AR 2507)

PGG estimated that the current groundwater flow beneath the mine toward the Black River was between 0.36 and 0.65 cubic feet per second (“cfs”). PGG then estimated that the flow to the Black River would be reduced by 0.032 cfs, due to increased evaporation from the pit lake compared to the original vegetated condition.

Thus, after the pit lake is completed the groundwater underflow toward the Black River will continue at an estimated range of approximately 0.33 to 0.62 cubic feet per second. The Black River flows at a rate of between 7 cfs and 400 cfs. A reduction of 0.032 cfs is a reduction of less than $\frac{1}{2}$ of one percent (0.46%) of the flow assuming the low end rate of 7 cfs or 0.008% the high end of 400 cfs. As concluded by PGG, this minute reduction is “extremely small” and essentially immeasurable. (AR 2507)

The overall reduction is essentially immeasurable and according to the County's expert, "the increased storage will slightly reduce variations in the local water table." (AR 671) In other words, the lake will act as a reservoir to replenish the ground water during the dry season when water levels in the Black River are at their lowest.

QRP has three responses to the complaint that the PGG studies do not include site specific analysis from the area downgradient of the mine: (1) this data is not required under TCC 17.20.200; (2) such data was unnecessary because PGG assumed that all the water flows through the site into the Black River (AR 2501); and (3) the County's expert hydrogeologist never requested any such information and deemed the PGG studies appropriate and conclusive on all water issues remanded by the Board. (AR 2489)

PGG conservatively assumed that all the water flowing through the site would reach the Black River. By taking the conservative approach of assuming that 100% of the groundwater flowing through the site reaches the Black River, PGG projected the maximum impact to that system. Thus, site specific studies downgradient of the mine were not deemed necessary by the County's expert in order to address the Board's remand issues.

Mr. Mead accepted PGG's methods, and in a Memorandum dated

October 31, 2002, stated, “I have reviewed the materials submitted by the applicants to address the issues raised on the remand and find that they adequately address the Hearings Examiner’s issues.” (AR 2489)

Based on Mr. Mead’s review, the Staff recommended on remand to approve the SUP for a second time. (AR 2478) ³¹

(c) Water Quality Findings. After addressing the water quantity issues, PGG prepared a separate section of their report that dealt specifically with the issues of contaminants, temperature and turbidity. The purpose of this section was to establish baseline water quality data for monitoring purposes and to project the potential impacts of the proposal on water quality. PGG determined that the ambient quality of the water was very good and that it meets drinking water standards. (AR 2508) The results of these tests can be found in Table 4 of the PGG Report. (AR 2519)

Next, PGG estimated the changes to water temperature. PGG found that the pit lake could result in slightly higher temperatures, but that the water would cool down prior to reaching the Black River system. (AR 2509) Quoting Mr. Mead’s study, PGG states:

³¹ The County argues that PGG’s methods were not enough, despite the County’s own expert (the author of a major report on the impacts of mining in Thurston County aquifers, and the expert who has been delegated the authority to evaluate such studies by County Code), having accepted the same. The Board’s Decision fails to cite a lack of downgradient test pits/wells as a basis for denial.

Mead (1995) cites expectations that temperature effects would be limited to areas several hundred feet downgradient of lakes. The proposed pit lake will be located more than 500-feet from the nearest downgradient wetland. Based on these factors, changes to water temperature at the river and wetlands are not expected to be significant. (AR 2509)

Essentially PGG determined that the Black River would not be impacted by temperature changes in the water as a result of the pit lake.

Finally, PGG addressed the issue of turbidity. Again, PGG concludes that turbidity is unlikely to impact the Black River. (AR 2509)

2. Conclusions on Water Impacts.

As the highest fact-finder for the County, the Examiner properly weighed and compared all of the competing evidence, and made the following conclusions relating to water:

I. Water.

1. Based on the analysis of the impact to groundwater, aquifer and the Black River, water quality and quantity issues have been addressed. The maximum lowering of water levels at any well will be no greater than 1.7 feet and the mining will not affect water levels in Ashley Creek.

2. The soil conditions, including sand and gravel layers under the wetland and eastern boundary, as well as under Ashley Creek have been adequately reviewed. There is conclusive evidence on water quality and water drawdowns. The reaction of the aquifer and the information from the observations and pumping at PW-1 have provided adequate information that the area will not negatively react to any aquifer stress. (Emphasis added) (CP 496 (Water Conclusions I.1 & I.2))

Disregarding the careful consideration that the Examiner gave to the record as a whole, the Board simply substituted its own judgment to support its denial.

Further, the Board's conclusion of "significant adverse impacts" is contrary to the County's own MDNS determination that the project "does not have a probable significant adverse impact on the environment." Thus, the Board's decision is a clearly erroneous application of law to the facts; and its finding of "significant adverse environmental impacts" was outside if its jurisdiction and decision making authority.

C. The Board's Decision Was Contrary to Its Final SEPA Threshold Determination and Was A Clearly Erroneous Application of Law to Facts, Contrary to RCW 36.70C.130(1)(d); and Outside the Board's Authority and Jurisdiction, Contrary to RCW 36.70C.130(1)(e).

1. The County's MDNS conclusion of No Significant Impacts Was Final.

As required by state law, the County's RO fully assessed the environmental impacts, including those impacts to the quality and quantity of groundwater (WAC 197-11-444(1)(c)), and determined that as mitigated, the project "does **not** have a probable significant adverse impact upon the environment."³²

³² AR 631 (emphasis added). WAC 197-11-350 provides that if the lead agency (the County) "specifies mitigation measures on an applicant's proposal that would allow it to

No party appealed this determination, and it became a final and binding decision. *See Chelan County v. Nykreim*, 146 Wn.2d 904, 932-33, 52 P.3d 1 (2002).

Thus, the County was bound by its own final determination that the project did not have probable significant adverse environmental impacts. To the extent that the Board disregarded this binding conclusion when it declared that the project would have “significant adverse impacts on the surrounding sensitive environment”, (CP 475) it acted outside of its authority and jurisdiction, and contrary to RCW 36.70C.130(1)(e).

The County’s SEPA threshold determination is important because it determined whether or not an Environmental Impact Statement (“EIS”) was required for the project.³³ Notably, an EIS can only be required “whenever more than a moderate effect on the quality of the environment is a reasonable probability.” *Sisley v. San Juan County*, 89 Wn.2d 78, 85, 569 P.2d 712 (1977) (emphasis added); WAC 197-11-794(1).

By issuing the MDNS, the County declared that as mitigated, the project would not have a reasonable likelihood of “more than a moderate adverse impact” on the environment. WAC 197-11-794 (defining

issue a DNS, and the proposal is . . . conditioned to include those measures, the lead agency shall issue a DNS.” The MDNS has been attached as Appendix 3.

³³ RCW 43.21C.031 requires an EIS for proposals having a “probable significant, adverse environmental impact.” The SEPA rules, under WAC 197-11-330 require an EIS for proposals “significantly affecting the quality of the environment.”

“significant” under SEPA).

2. The Board’s Decision Contradicts the Final MDNS.

If the Board believed that the project had more than a “moderate effect on the quality of the environment”, it should have preserved its right to contest the determination by properly appealing the MDNS. Because it failed to timely appeal such a determination, it was barred from concluding differently in the Board’s Decision. *See Lakeside, supra* .

In *Wenatchee Sportsmen*, the Washington Supreme Court held that an untimely appeal precluded collateral attack of a land use decision and rendered the approval valid and “no longer reviewable”. *Wenatchee Sportsmen*, 141 Wn.2d at 182.

In addition, the Board used the wrong standard for reviewing QRP’s SUP, when it concluded that the SUP was not appropriately located because it had “significant adverse impacts” to the environment.

D. The Board Decision Was Clearly Erroneous and Based on Unlawful Procedure. The Board Used the Wrong Criteria to Deny the SUP and Their Action Was Clearly Erroneous and Based on Unlawful Procedure.

Under TCC 20.54.040(3), a SUP applicant must demonstrate that the proposed use is appropriately located. (App. 2)

Applying the code criteria, the Examiner concluded:

10. With conditions, the proposed use would be appropriate in the location for which it is proposed. The site is an

existing gravel mine that has been designated, at least in part, as a Mineral Resource Land of Long-Term Commercial Significance. *Finding of Fact No. 3.*

a. Although the proposal would have impacts on adjacent property, neighborhood character, natural environment and traffic conditions, such impacts would not be “substantial” or “undue” according to the evidence that was submitted. The neighborhood character is already defined as including gravel mining operations, both on the Quality Rock site and the adjacent Hard Rock Mining Company site. . . . (AR 359)

Rather, the Board made two conclusions on the issue of whether the project complied with the appropriate location criteria of TCC 20.54.070(3):

1. “[T]he proposed location for the gravel mine is *not* appropriate due to the gravel mining operations’ **significant adverse impacts** on the surrounding sensitive environment”;³⁴ and
2. “As a result of the hearing examiner’s own findings, and lack of findings regarding impacts to the Black River, the hearing examiner’s ultimate conclusion that the proposed location of the project is appropriate and that the project will not have an adverse impact on the surrounding environment, including the Black River, and community is not supported by the evidence in the record.” (CP 477)

It appears that the Board justified denying the SUP based on its conclusion that the project was not appropriately located and thus did not

³⁴ CP 475 (emphasis added).

meet TCC 20.54.040(3)(a). However, when making its conclusion - the Board used the wrong standard.

The Board did not discuss or consider how the project might result in “substantial or undue adverse effects” on the “natural environment” as required by TCC 20.54.040(3)(a). Instead, it inappropriately concluded that the project would have “significant adverse impacts” to the environment.

Because the Board was precluded from finding that the project had “significant adverse impacts” due to the MDNS, its conclusion that the project was inappropriately located has no basis, and is therefore clearly erroneous (RCW 36.70C.130(1)(d)). Further, the Board’s failure to apply the correct standard to QRP’s SUP application also constitutes an “erroneous interpretation of the law” warranting reversal pursuant to RCW 36.70C.130(1)(b).

Even if the County were to argue that the Board intended to use the correct “substantial or undue adverse” standard of TCC 20.54.040(3)(a), and that a finding of “significant” somehow equates “substantial or undue adverse effect”, the factual record and the County’s MDNS contradict this argument. If the final and binding MDNS concluded that as mitigated, the project’s impacts did not rise to the level of more than a “moderate effect on the quality of the environment”, then the project’s environmental

impacts simply do not rise to the level of “substantial or undue adverse effects” to the environment.

While “substantial or undue effects” is not defined under TCC 20.54.040(3)(a), it is axiomatic that this test sets a higher bar than the SEPA threshold of whether a proposal has a “reasonable probability of more than a moderate effect on the environment.”

In addition, the MDNS conclusion of no significant impacts to the environment is *res judicata* on the Board. *Res judicata* or claim preclusion applies in administrative proceedings. *Hilltop Terrace Homeowner’s Ass’n v. Island County*, 126 Wn.2d 22, 31, 891 P.2d 29 (1995).

The issue of whether this project, as mitigated, constituted, a “significant adverse impacts on the surrounding sensitive environment” was already determined in the MDNS.

E. The Board’s Decision Relating to Mitigation Was Clearly Erroneous and Not Supported by Substantial Evidence.

In its decision, the Board concluded without any factual support:

The proposed mitigation to install monitoring wells and study in five years **does not sufficiently mitigate** the undisputed impacts of the proposed project due to the sensitivity of the Black River and surrounding area. (Emphasis added) (AR 3231; CP 477)

The conclusion falls into the same factual scenario as *Maranatha*

Mining, Inc., supra. In *Maranatha, supra*, the Court discussed the issue relating to a project's mitigation and a decision maker's failure to consider the entire record:

It is apparent that the Council gave little consideration to the merits of Maranatha's application, and that it disregarded the facts set forth in the examiner's findings. The Council seems to have heard clearly the citizen complaints and the comments of one of its own members while **disregarding the record**. We cannot escape the conclusion, in view of the evidence in support of Maranatha's application, that the Council based its decision on community displeasure and not on reasons backed by policies and standards as the law requires. Further, **if the Council is concerned with Maranatha's ability to comply with the 31 conditions** that the examiner placed on the permit, **the proper remedy is to monitor the operation** (for which the conditions provide) and to withdraw the permit in the event of noncompliance. **It is improper to deny the permit to an applicant who, throughout the application process, has demonstrated a willingness to mitigate any and every legitimate problem.**

Id. at 807. The scenario in *Maranatha* is essentially the same one presented to the Court in this case.

The Board's characterization of the Examiner's Condition V as "under an approve now, study later" regime (County's Opening Brief at 24) fails to understand the County's own regulatory scheme. The five-year review is a requirement of the County's code. TCC 20.54.070(21), which authorizes SUPs for mineral extraction, and specifically subsection (e), provides:

Permit Review. Any permit issued pursuant to this chapter shall be reviewed by the approval authority no less frequently than every five years from the date of the decision to approve the permit.

(Emphasis added). Thus, this monitoring condition is a legislative requirement imposed by the Board on every SUP for mining activities.

In fact, the County Code requires frequent monitoring of mines. The County's Mineral Extraction Code, TCC 17.20.210, requires "Groundwater Monitoring" and requires quarterly monitoring for mining conducted in an aquifer. (Appendix 2)

In addition, the Board failed to acknowledge that the Examiner re-enforced his monitoring requirements by adding enforcement conditions to the SUP approval. Condition E states, "[t]he operation of the facilities on the site shall comply with the Thurston County Mineral Extraction Code, TCC 17.20." (AR 056) Condition J states, "[t]he Applicant shall comply with all local, state and federal permits and regulations." (AR 057)

TCC 17.20.280, entitled "Civil Infractions" provides the County with the authority to issue civil penalties for failure to comply with any provisions of Chapter 17.20. TCC 20.60.050(4) provides the development services director with the authority to, "**suspend or revoke a permit or**

approval required by this title³⁵ whenever the permit is...in **violation of any ordinance or regulation or any provision of this title**, or when a use or building is being maintained in a manner contrary to the terms of the permit or approval.”

According to Condition J, QRP must also stay in compliance with their other permits to retain the SUP. These permits include the NPDES Sand and Gravel General Permit issued by DOE. (AR 2529-2580) The NPDES permit is required by the State and regulates the discharge of stormwater and water used in processing (washing) gravel to both groundwater and surface waters. The NPDES permit requires weekly monitoring for temperature of process water between July and September; monthly monitoring of ground and surface discharges of process water and quarterly monitoring of ground water discharges of stormwater.

The Board’s conclusion that monitoring would be inadequate contradicts its own Mineral Extraction Code.³⁶ The Board’s conclusion that the required mitigation was inadequate is an erroneous interpretation of the law, which gave no deference to the Examiner’s findings. Further, the Board’s Decision on this topic is an erroneous application of the law to the facts.

³⁵ “Title” refers to Title 20, “Zoning”. As a Special Use Permit, issued pursuant to TCC 20.54.070(21) this project is subject to Title 20.

F. **QRP's Use of An Exempt Well Is Not An Issue that the County Has Jurisdiction or Authority Over.**

QRP's use of water from its exempt well has been questioned by the County and BHAS. However, the County has no authority to regulate, restrict or prohibit QRP's use of the exempt well. The withdrawal of groundwater is regulated by the Department of Ecology ("Ecology") under Chapter 90.44 RCW; not the County.

QRP has the undisputed right to withdraw up to 5,000 gallons of groundwater per day or 25,000 per week from its exempt well. RCW 90.44.050. QRP also recycles water through settling ponds and a return flow line. (AR 2498) Not all of the gravel is washed nor is it required to be. (VR at 57 (2-10-03))

The County argues that QRP will need more than 5,000 gallons per day to serve its expansion, and that accordingly, it is unknown how much water QRP will use for its expansion. The County's argument is simply disingenuous. The amount is known and dictated by state law. The record reflects that, "By using an exempt well as a source, the mine will account for water pumped from the well **but will not be required to account for use of recycled water.**" (Emphasis added) (AR 2680)

³⁶ TCC 17.20.210.

PGG authored a study relating to another mine on how much water was used in mining for domestic needs, i.e., washing, toilets, etc. and washing the gravel, dust control, and truck wheel washing, some of which activities will be engaged in by QRP. In Table 2 of the report (AR 2687) under domestic use, PGG references that only 200 gallons per day will be needed for domestic use leaving 4,800 gallons per day or 24,000 gallons per week for other needs.

In any event, enforcement of the 5,000 gallon per day limit was made a condition of approval by the Examiner. The condition was recommended by the Mr. Mead who recognized that it was simply a restatement of state law.³⁷ These became Conditions of Approval W and X of the Second HE Decision.

If these conditions are not followed, the County can suspend or revoke its SUP. QRP faces civil penalties from Ecology (RCW 90.44.500, 90.03.600) and misdemeanor charges (RCW 90.44.120) if it fails to abide by the 5,000 gallon per day limit.

In its arguments relating to QRP's use of the exempt well and the potential impacts from the pit lake, the County mistakenly characterizes several of its statements as being "undisputed." The County states that "[i]t is also undisputed that the loss of 9,500,000 gallons of water from the

Pit Lake and the yet to be determined amount of groundwater that will be pumped from Quality Rock's on-site well, diverts water that would otherwise would discharge to the Black River." (AR 346) QRP disagrees with both of these statements.

The idea that 9,500,000 gallons of water will be lost to the Black River due to evapotranspiration is a misstatement. The negligible amount of water that will be lost from the project is discussed above at pages 20-25. But, even if the lake were not there, water would still evaporate. The Littlerock Mine operates under permits that require reclamation. The reclamation will either be the lake or a forest. PGG estimated that the difference between the evapotranspiration from the lake and from the forest is extremely small.

Understanding this, the County resorts to fear tactics to hide the substantial evidence in the record that the project will have minimal impacts from the pit lake. To do this, the County repeats that the mine expansion will result in a 75 acre lake that will reduce the recharge to the regulated river by 9 1/2 million gallons annually.³⁸

³⁷ AR 2679; VR 56-57 (2-10-03 hearing).

³⁸ This phrase was repeated over and over in a mantra like fashion a dozen times in the County's Opening Brief, but no real analysis was given to explain the impacts. PGG properly explained the pit lake's impacts and found them to be minimal to the aquifer, groundwater and Black River. See discussion above at pages 25-26.

However, PGG's conclusion that the difference in evapotranspiration when comparing a lake versus a forest scenario is extremely small is what is significant, not the fact that evapotranspiration will occur. The County's repetition of selected "facts" without any analysis behind it is simply irrelevant, PGG's comparison of the different scenarios (forest or lake) shows that the difference is minor.

The County also attempts to bolster the Board's Decision by adding new, un-codified SUP criteria. The County argues to this Court that:

The comprehensive plan policies as they relate to ground water and surface water are essentially reflections of state water resource laws and regulations. Therefore guidance on applying and interpreting the comprehensive plan policies can be gleaned from the state water resource laws. (County's Opening Brief at 34)

The County then cites to state water law relating to water withdrawals (RCW 90.54.020(3)); the establishment of base flows by Ecology (RCW 90.22.010); and the authority granted to Ecology to close water from further withdrawals (RCW 43.21A.064). (County's Opening Brief at 34-36) From its argument, the County appears to be claiming that these statutes have somehow been incorporated into the County's Comprehensive Plan policies and can be used as SUP criteria to justify the Board's denial of QRP's SUP.

The County cannot rely on standards that it has not adopted in its zoning code, as this Court has held in *Lakeside Indus., supra*. In *Lakeside Indus.*, the Thurston County Board reversed an SUP approval for an asphalt manufacturing and recycling plant in Nisqually Valley.

On appeal, the County argued that it could use general policy from its comprehensive plan to prohibit what was allowed in its zoning code. *Id.* at 896. This Court disagreed and held that the Board’s decision “violates the rule that specific zoning laws control over general purpose growth management statements and fails to provide meaningful standards for review of a county decision to deny a permit.” *Id.* at 898. The Court further stated that the use of general policies of the comprehensive plan on a case-by-case basis:

is simply another way of allowing it to reject a specifically allowed special use (asphalt manufacturing) by invoking the general purpose statement underlying the sub-area plan. And again, a case-by-case approval procedure provides no fixed standards for an applicant or a reviewing court.

Similar to its attempts in *Lakeside Indus.*, the County again appears to be using un-adopted SUP standards to justify its SUP denial. However, the County did not actually codify these state water statutes as SUP criteria, and did not provide QRP (or any applicant) with fixed SUP standards relating to state water law policies. Thus, the County’s attempt to impose additional SUP criteria must be rejected, regardless of whether

state water statutes are “essentially reflected” in the Comprehensive Plan policies. (County’s Opening Brief at 34)

G. QRP’s Requested SUP Complies with the County’s Comprehensive Plan.

In its decision, the Board made the general conclusion that the “proposed gravel mine is not consistent with the comprehensive plan policies on the natural environment”.³⁹ The Board then listed four policies from the plan that the “proposed project is not consistent with”, cited to no factual basis for this conclusion, and its complete discussion is as follows:

Protecting wildlife habitat for important species and protecting unique and rare habitats (Goal 1, Objective B, Policy 4); recognizing the hydrologic continuity between ground and surface water (Goal 2, Objective A, Policy 3); protecting groundwater aquifers, fish and wildlife habitat, and recreational functions of streams (Goal 2, Objective B, Policy 1); protecting streams from adverse impacts of activities occurring adjacent to their waters or within their watersheds by avoiding degradation of water quality (Goal 2, Objective C, Policy 1). (AR 3231)

In stark contrast, the Examiner made specific findings and conclusions that the project complied with the Comprehensive Plan. Indeed, the Examiner evaluated each applicable Comprehensive Plan policy in relation to the factual record. The complete discussion presented by the Examiner is attached in the Appendix 5 at AR 353-356.

³⁹ CP 475. QRP acknowledges that TCC 20.54.040(1) requires a proposed use to comply with the County’s Comprehensive Plan. AR 052.

Aside from the fact that the Board ignored the numerous Comprehensive Plan Policies analyzed by the Examiner, the Board failed to explain how the project did not comply with the four cited Comprehensive Plan policies. Since the Examiner's findings on Comprehensive Plan compliance are considered verities on appeal, the Board's conclusion is not supported by substantial evidence.

If the Board's conclusion that the project would have "significant adverse impacts" to the environment was meant to be the basis for the Board's conclusion that the project did not comply with the four natural environment policies, then for the reasons discussed above at pages 28-31, the conclusion is clearly erroneous and outside the authority of the Board to make (RCW 36.70C.130(1)(d)). Further, the Board's unsupported conclusion relating to Comprehensive Plan compliance is: (1) not based on substantial evidence in the whole record and; (2) is an erroneous interpretation of the law entitling QRP to a reversal of the Board's Decision pursuant to RCW 36.70C.130(1)(b) and (c).

V. QRP'S CROSS-APPEAL.

QRP reincorporates and relies upon the above facts and analysis set forth herein.

A. The County is Liable to QRP for Violating its Constitutionally Protected Property Interests and for Violating RCW 64.40.020.

The Commissioners' actions were arbitrary, capricious, in excess of their lawful authority and illegal and they knew it.

1. Attorneys' Fees and Damages.

QRP is entitled to recover damages and attorneys' fees pursuant to 42 U.S.C. §§ 1983-1988 and/or RCW 64.40.020. RCW 64.40.020 provides a cause of action for government actions "which are arbitrary, capricious, unlawful, or exceed lawful authority . . ." If the action is based upon it being unlawful or in excess of lawful authority, then the plaintiff must show that the "final decision of the agency was made with knowledge of its unlawfulness or that it was in excess of lawful authority, or it should reasonably have been known to have been unlawful or in excess of lawful authority." If the action of the government is arbitrary and capricious, there is no necessity to show such advance knowledge.

In this case, QRP reminded the Board of its role. They knew they were acting in an appellate capacity and their limited role was to search the record for substantial evidence supporting the Examiner's decision.

Further, given that their actions in denying the permit were summarily made and so badly ignored the vast majority of the Examiner's findings and conclusions, this Court should hold that their actions were arbitrary and capricious.

For these reasons, the trial court should be reversed on this issue and the case should be remanded to the trial court for entry of a finding that the Board's actions were arbitrary and capricious.

A finding that the Board's actions are arbitrary and capricious is binding on the trial court in an action for damages under RCW 64.40.020. Thus, if this Court determines that the actions of the Board were arbitrary and capricious, then QRP is entitled to damages. *Hayes v. Seattle*, 131 Wn. 2d 706, 934 P.2d 1179 (1997).

2. The Trial Court's Decision Is Not *Res Judicata* or Collateral Estoppel On A Damages Claim.

The Trial Court determined that the Board's actions were not arbitrary and capricious. That determination was made based on the documents before him which were only those provided at the administrative proceeding. That appeal was not a lawsuit. In fact, discovery is not allowed in a LUPA appeal except by special permission. *See* RCW 36.70C.120.

A suit for damages from an administrative body's decision and the appeal from the administrative decision do not involve the same subject matter simply because they arise out of the same set of facts.

You reach that conclusion because the nature of the two claims is entirely disparate. The action for judicial review focused exclusively on the propriety of the decision-making process of the Seattle City Council. On the other

hand, the subsequent action for a judgment for money to compensate Hayes for the damages he allegedly suffered as a result of the Council's actions.

Hayes at 713. The Court considered four issues to determine whether two causes of action are the same. These are: (1) whether rights or interests established in a prior judgment would be destroyed or impaired by prosecution of the second action; (2) whether substantially the same evidence is presented in the two actions; (3) whether the two suits involved infringement of the same right; and (4) whether the two suits arise out of the same transactional nucleus of facts.

In determining that judicial review of an administrative decision and a subsequent action for damages are separate, the Court held that in order to succeed in an administrative appeal, the plaintiff need only establish that the government's action met one of the five standards listed in the statutory writ of cert. The Court noted "the evidence he needed to maintain that action is far different from the type of evidence that he needed to establish that he was entitled to an award of damages." *Hayes* at 713. The Court further held that although there are two separate causes of action, they can be brought together or they can be brought separately.

The Trial Court's determination that the Board's actions were not arbitrary and capricious, based upon the administrative record, is not binding on the damages action. Very different evidence will be developed

in the damages action to show not only that the Board's actions were arbitrary and capricious, but also that they violated substantive due process.⁴⁰

For the reasons above, this Court should reverse the Trial Court and find that the Board's actions were arbitrary and capricious or construe the Trial Court's order to mean that for the purposes of the administrative appeal, the Board's actions were not arbitrary and capricious and reinstate and remand the case for a trial on the issues of damages and attorneys' fees under 42 U.S.C. §§ 1983-1988 and RCW 64.40.020.

3. The Role of The Board of the County Commissioners In Land Use Cases.

The analysis set forth on pages 19-20 relating to the Board's appellate role is incorporated herein. As mentioned earlier, the Board decided to use the hearing examiner system where the Examiner is the decision-making authority and the Board acts as an appellate tribunal. The Board not only knew these were their legal obligations but were reminded of them through a memorandum prepared by QRP's attorney.⁴¹

4. Necessity to Allow Mitigation.

QRP reincorporates its discussion on the adequacy of the mitigation set forth on pages 34-37.

⁴⁰ A LUPA action was not established until 1995. Before that, a land use decision was reviewed by a writ of cert under RCW 7.16.120.

5. The Board's August 4, 2003 Hearing.

In this case, the Board clearly substituted its judgment for that of the Examiner. The substantial evidence relied on by the Examiner is outlined above. The Board simply disagreed with the decision and substituted its judgment for the Examiner's judgment. In fact, the entire August 4, 2003 appeal hearing in which 3,232 pages of documents and six days of testimony were considered, consists of 14 pages. There is no discussion of their role as an appellate tribunal; of any conflicting evidence; of the testimony before the Examiner; there are no questions asked of Staff to clarify any issue. Immediately afterwards, Ms. Oberquell made two motions. The first one does not concern us and in the second, Ms. Oberquell moved to reverse the Examiner's approval of the SUP. She then addressed and misrepresented some of the findings of fact made by the Examiner. Among them is No. 4:

The groundwater section of the Health Department has determined that the existing operations and proposed expansion does pose a significant risk to ground and surface water resources. The proposed mitigation is to install monitoring wells.

Clearly, the proposed mitigation is much more than to just install monitoring wells. The Board either misunderstood or totally ignored all of the other mitigation requirements imposed by the Examiner, its own

⁴¹ AR 89-140, especially AR 99-103.

County Code, the MDNS, the NPDES and the DOE. (VR 8, Lines 6-10)

6. Credibility of the Witnesses.

Ms. Oberquell then relies on Ms. Romero, a person hired by BHAS in whom the Examiner had little confidence⁴² to support her Motion. (VR 8-4-03, at 9) The testimony given by Ms. Romero was not considered authoritative by the Examiner for a number of reasons, including her unfamiliarity with the modeling techniques and the fact that she “played around” with several figures before landing on one that quite frankly, she did not understand. (AR 348, Finding 50) The Board clearly substituted its judgment on the credibility of the witnesses for that of the Examiner to support its biased opinion of the project. (VR 9, Lines 5-11)

7. The Board Knew Its Action Was Unlawful.

QRP’s attorney advised the Board of its role on appeal. (AR 89-140) It is interesting to note that in the hearing on the appeal of the Examiner’s first decision held on June 26, 2002, the Board members were Ms. Oberquell, Ms. Wolfe, and Mr. O’Sullivan. This hearing consisted of 29 pages and reflects that Mr. O’Sullivan advised the other two that:

The other thing is that I think that’s—the last decision that was overturned last Friday had to do with Nisqually Valley, where I really felt I was making the right decision on that. And—and the—consequently, Superior Court Judge decided that—that we did not make a good decision on that. Consequently, I think that this is going to just point

⁴² See Finding No. 50, AR 348

out the inevitable. I think under the Growth Management Act that it allows mining activities and certain activities adjacent to that. And then you could put up as many obstructions as you want, but eventually, this is going to happen. And that it—and so I suppose doing this. I think it's—it's unfortunate that—and in fact that it's—it's taken a business owner and running all of his resources up potentially to stop him from doing this activity when—and actually I do believe that it—is permitted. There is a permitted use to do so. So, I oppose sending it back and—and basically putting off the inevitable. (VR 23-24, 6-26-03 hearing)

Mr. O'Sullivan voted against remanding the matter to the Examiner for additional proceedings and was eventually voted out of office!

The fact that on August 4, 2003, they asked no questions of Staff; showed no curiosity in the 3,232 pages of testimony and six days of hearing transcripts; all expressed the same concerns; and immediately agreed with Ms. Oberquell's recitation and motion, shows that they likely had prehearing discussions about this matter and planned to present a united front before the hearing began. In any event, QRP is entitled to discover whether these suspicions are justified and whether their constitutional right to a fair hearing was denied them.

B. Declaratory Judgment Action.

QRP is entitled to a declaratory judgment that it is entitled to a permit for the asphalt production plant. An asphalt plant was approved as an accessory use to the existing mine and there was no appeal. However,

the County has refused to issue the permit for the asphalt plant.

To further this cause, QRP obtained a “Notice of Construction Preliminary Determination” dated May 21, 2001 from OAPCA. (AR687-722) OAPCA has since changed their name to the Olympic Region Clean Air Agency (ORCAA).

The Examiner’s Second Decision contains the following:

ORDERED that the Special Property Use Permit to expand an existing gravel mine, replace a concrete batch plant, **construct a hot mix asphalt plant**, and resume concrete and asphalt recycling, as depicted on project plans labeled as Exhibit 1 is **GRANTED**. (Emphasis added) (AR 055)

BHAS did not appeal the approval of the asphalt plant. The Board’s decision contains no discussion of the asphalt plant.

Pursuant to RCW 7.24.010, QRP sought a declaratory judgment that the asphalt plant Special Use Permit and Site Plan Review approved by the Examiner should have been issued.

This case presents an actual justiciable controversy. A justiciable controversy has been defined as one

(1) which is an actual, present and existing dispute, or the mature seeds of one, as distinguished from a possible, dormant, hypothetical, speculative, or moot disagreement, (2) between parties having genuine and opposing interests, (3) which involves interests that must be direct and substantial, rather than potential, theoretical, abstract or academic, and (4) a judicial determination of which will be final and conclusive.

Diversified Indus. Dev. Corp. v. Ripley, 82 Wn.2d 811, 815, 514 P.2d 137, 139 (1973); RCW 7.24.050. QRP asserts that this matter was appropriate for declaratory relief because the County continues to deny QRP a permit to operate an asphalt plant.

The denial of a permit that is due is a constitutional violation of the XIV Amendment to the United States Constitution and Article I, Section 3 of the Washington State Constitution as a deprivation of a property right. Rather than deal with this issue directly, the Trial Court held that it was moot because it reinstated the Examiner's decision.

This does not address the issue of whether the County's refusal to issue the application denies QRP's constitutional rights. This Court should reverse the Trial Court, determine that QRP is entitled to the asphalt plant permit and remand the matter to the Trial Court for trial on damages and attorneys' fees.

C. Motion to Amend Cross Appeal.

If the Court reverses the Trial Court and reinstates the Board's decision, then QRP would be in the prejudicial position of having this development application denied and could potentially be precluded from using 88th Avenue Southwest as a truck access for its existing operations, regardless of the future development of the site. This could in fact put QRP out of business.

If this Court reverses the Trial Court, then it should reconsider the Board's denial of the Motion to Amend to allow QRP to argue the access issue.

VI. CONCLUSION

For the reasons stated above, this Court should: (1) affirm the Trial Court's Order; (2) reverse the Board's Decision; (3) direct the County to grant the SUP; (4) determine that the Thurston County Commissioners' actions were arbitrary, capricious and unlawful and that the County Commissioners knew that their actions were unlawful or, in the alternative, remand those issues to the Trial Court for further proceedings on them; and (5) remand the case to the Trial Court for a trial on the damages issues.

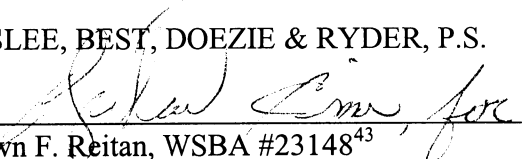
Further, QRP requests that this Court enter a declaratory judgment in its favor that it is entitled to the asphalt batch plant permit and for a trial on whether or not QRP is entitled to damages for the County's refusal to issue the permit.

If this Court reverses the Trial Court and reinstates the Board's decision, then the Court should reconsider the denial of the Motion to

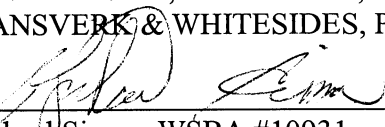
Amend the Cross Appeal to allow QRP to argue that it has the right to use its traditional access road.

DATED this 13th day of July, 2006.

INSLEE, BEST, DOEZIE & RYDER, P.S.

By 
Dawn F. Reitan, WSBA #23148⁴³,
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LANDERHOLM, MEMOVICH,
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By 
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Attorneys for Respondents/Cross Appellant

⁴³ The above identified counsel has been retained to represent QRP only on the LUPA Appeal issues; not the Cross-Appeal issues, and accordingly attaches her signature only to the LUPA response portion of this brief.

Appendix 1

THE DIRECT AND CUMULATIVE EFFECTS OF GRAVEL MINING ON GROUND WATER
WITHIN THURSTON COUNTY, WASHINGTON

1995

Robert D. Mead
Ground Water Management Program
Environmental Health Division
Thurston County Public Health and Social Services Department

by creating a gravel pit lake causes shifts in the local water table that depend on the ground water gradient, the permeability of the aquifer, and the size of the lake. For the geological conditions found in Thurston County, the additional risk presented by simple excavation within an aquifer is small. Well structured regulatory oversight and proper enforcement of a carefully-designed set of best management practices is necessary to minimize this risk.

Concrete batch plants are a more serious risk to ground water quality, particularly if process waters are discharged to ground water without adequate treatment. These process waters can have high pH levels and there are a variety of cement additives that can significantly effect a wide variety of water quality parameters. The nature of most cement plant process water discharges is such that inadequate treatment of those waters will have a measurable and unacceptable effect on ground water. Concrete batch plants, especially if there is any form of discharge, would require a high degree of regulatory oversight to avoid ground water quality degradation.

Asphalt batch plants present less risk to ground water than concrete plants. The potential risk from asphalt plants is mainly from the effects of stormwater, vehicle fueling, and fuel storage and handling. However, asphalt plants are still a very significant source of risk to ground water quality and require adequate regulatory oversight.

Petroleum leaks and spills resulting from vehicle and equipment fueling, maintenance, and washing are the most common threat to ground water associated with gravel mining. This risk varies depending on the scale of these activities and the degree of oversight provided by the mining operation management. That petroleum leaks and spills are a problem is clear from Department of Ecology incident reports. Because of the lack of ground water monitoring and follow-up investigations on these incidents, the actual degree of ground water impact is unknown.

Creating gravel pit lakes lowers the water table in wells up-gradient from the lake and raises them on the down-gradient side. This is a relatively local effect, but can measurably affect water levels in wells very near to the gravel pit lake.

Mining into an aquifer could potentially breach the hydrological barriers between different aquifers. If this were to happen, water in the two aquifers could mix, potentially affecting water quality or water levels in one or more aquifers. Many gravel pits in Thurston County are located close to the Vashon Till, a major aquitard, suggesting that the potential for intermixing of aquifer waters is significant.

Abandoned gravel pits have often been used for the disposal of various types of non-inert solid wastes. The adverse effects of this practice are well documented and compelling enough that this practice should, in general, be completely discontinued. Only truly inert materials should be placed within gravel pits.

In summary, gravel mining may have a complex array of environmental effects on ground water. This is because different mining operations will each consist of a different set of mining and processing activities. The environmental effects can only be understood by examining each separate activity in the mining operation. Each of these component activities has a different environmental effect and requires a different management approach to risk reduction. Gravel mining, in general, poses low to moderate risks to ground water quality and quantity. But consistent regulatory oversight of project design, operation, monitoring and closure, and effective enforcement if necessary, can minimize the risk of ground water quality degradation.

I. Introduction

Although gravel mining is a widespread and common activity within Washington and the rest of the United States, its environmental effects are not well documented. Before any regulatory system for gravel mining can be properly designed and implemented, the environmental effects must be known and quantified.

Modern civilization consumes a wide variety of resources in the course of its day-to-day activities. Some of these resources that society considers essential are obtained only by mining mineral deposits. Mining has taken place nearly everywhere in the world, including Thurston County. There are two main types of mining, underground mining and surface mining, depending on the location of the resource that is being mined.

The types of mineral resources found within Thurston County are clay, quarry rock, iron oxides, coal, peat, metals, and sand and gravel. All of these are located near the earth's surface and so are classified as surface-minable resources.

Deposits of geologically recent clays within the city of Centralia, just south of the Thurston County border, have been mined for many years. Potentially minable clay deposits are found in Thurston County in the late Eocene Northcraft Formation and the early Pleistocene Logan Hill Formation (Noble and Wallace, 1966). Because clay deposits are highly impermeable and do not easily permit infiltration of potentially contaminant-bearing waters, they are a low threat to ground water.

Quarry rock was mined in the Tenino area for a number of years from sandstone layers within the upper part of the McIntosh Formation (Noble and Wallace, 1966). Very limited mining of this formation for decorative and dimension stone has taken place in recent years and there is some potential for future expansion. The basalt of the Crescent Formation in the Black Hills and other locations in northwestern Thurston County have been mined for road ballast, rip-rap, and similar uses. The Northcraft Formation in the Bald Hills also has been mined for similar uses. In most areas where minable stone is found there are very limited ground water resources and the potential for aquifer contamination is low.

Iron oxides potentially suitable for pigment (umber) manufacture, are found in several locations (Valentine, 1960). These deposits are small and were formed where iron-rich waters enter bogs or wetlands. The changes in environmental conditions caused iron to be precipitated as "bog iron". Occurrences are found near the Black River in Township 17 North, Range 3 West, section 25 and near Lake St. Clair in Township 17 North, Range 1 East, sections 4 and 6. Because these deposits are in environmentally sensitive areas closely associated with wetlands, they are probably not minable.

Significant coal deposits are found within the Skookumchuck Formation in southern Thurston County and northern Lewis County (Snively and others, 1958). There is one large coal mine in southern Thurston County, which will probably continue to operate for many years into the future. This mine may seek to expand, or other parties may seek to open new mines in this area. Coal mining is regulated primarily by the Federal government and is not regulated by local land use permits. Coal mining can have very significant environmental effects, which are well documented in many studies.

Valentine (1960) lists 23 areas totalling 2,988 acres within Thurston County that contain peat resources. Almost half of these peat resources are in the Black River valley between Black Lake and Littlerock. Wetland restrictions would probably make this low-unit-value resource difficult to mine, although at least one peat mine in Thurston County has a valid Department of Natural Resources mining permit. Peat

mining could have several possible effects on ground water. These include increasing the levels of tannins and lignins, changing pH and color, increasing nitrate levels, and introducing pathogens. Because of the limited potential for peat mining in Thurston County, its potential environmental effects will not be discussed further in this report.

There are few significant occurrences of metal ores within Thurston County. Gibson (1940) describes low levels of gold and silver within veins in basalt in the Black Hills. Unpatented mining claims were once filed for placer gold along Waddell Creek, and there are other scattered locations in the Black Hills where short exploratory tunnels were developed by prospectors. There are also scattered locations where copper-stained basalt can be found. None of these occurrences produced significant amounts of metals and the possibility of significant amounts being located in the future is very low.

Sand and gravel are by far the most important mineral resource in Thurston County and the only resource, except coal, that has been the target of significant mining activities. These resources are also generally located in areas of high ground water susceptibility. For those reasons, the environmental effects of sand and gravel mining are of far greater concern than other types of mining. This report will discuss only the effects that gravel mining may have on ground water. As used here, the term "gravel" will also refer to sand-sized material.

II. Methods of Study

This study was conducted in three parts. The first part was a comprehensive review of published technical and scientific literature on the environmental effects of gravel mining on ground water. Computer bibliographic database searches were used extensively to locate sources, and an effort was made to locate useful unpublished data. The result was a very complete collection of information, world-wide in scope, related to gravel mining and ground water.

The records of regulatory agencies that oversee gravel mining were also examined in order to assess the types and frequencies of complaints, records of inspection reports, and incidents that could have resulted in ground water contamination. This included records on associated activities that commonly accompany gravel mining and covers events such as fuel spills and leaks, stormwater discharges, and other discharges. These listings include information on incidents up to 1993. It should be noted that these incident reports are only the regulatory agency's side of the incident and may not represent the full story.

The information on the direct effects of gravel mining gathered in the first two parts of the study was used to study the cumulative effects of gravel mining in Thurston County. The cumulative effects study considered the individual effects of single gravel mines, the total area of mined sand and gravel deposits in Thurston County, and estimates of probable future demand for sand and gravel in Thurston County. This information was interpreted to evaluate the probable future effects of gravel mining in Thurston County based on different patterns of future mining activity.

The area of gravel excavations in Thurston County was estimated using the ARC/CAD geographic information system (GIS), along with the total area of ground water exposed by gravel excavations. The outlines of existing gravel pits were taken from digital Washington Department of Natural Resources (DNR) maps of Thurston County soils and DNR gravel mining records. Additional gravel excavations were digitized into the GIS from U. S. Geological Survey 7.5 minute series topographic maps and 1:2,000 airphotos. The areas of exposed water within gravel excavations were obtained from topographic maps and airphotos.

III. Summary of mining practices

There are three basic types of gravel mining operations, defined by their relationship to the water table; dry pit, wet pit, and dredging (Newport and others, 1974). In a dry pit, gravel is extracted above the water table. In a wet pit, gravel is being extracted from below the water table. In dredging operations, gravel is being extracted from existing water bodies, including lakes, rivers, and estuaries. Dredging operations are rare in Thurston County and will not be discussed.

A dry pit is the simplest type of gravel mining and the equipment involved can range from small bucket loaders and dump trucks to large power shovels, bucketwheel excavators, and belt conveyors (Tepordei, 1992). Wet pits normally excavate gravel using either a drag-line excavator (Figure 1) or a drag scraper (Figure 2) (Landberg, 1982). Both of these types of excavators have the main part of the excavating machinery above water, with a relatively simple bucket entering the water and doing the excavating.

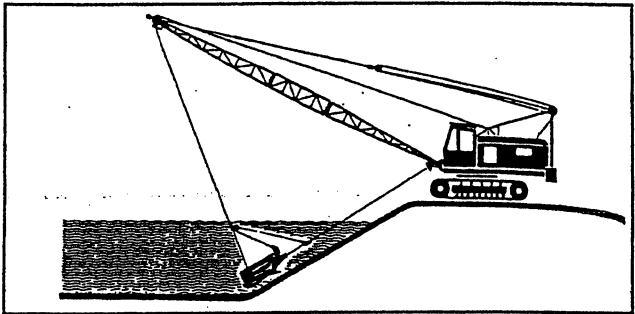


Figure 1 Drag line excavator (from Landberg, 1982).

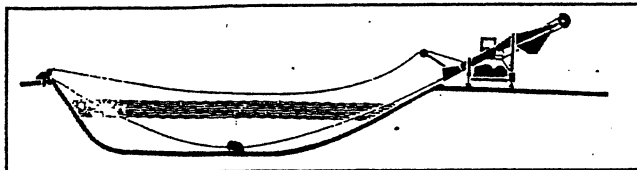


Figure 2 Drag-line scraper (from Landberg, 1982)

Gravel producers supply products for a wide variety of end uses. Most of these uses, especially construction or specialty applications have exacting requirements. These requirements include size grading, strength, wear resistance, reactivity, and clay or organic material content (White and others, 1990). In order to meet these

requirements, producers generally must process the gravel after it is mined. Processing methods include crushing the larger material, washing with water, and sizing with vibrating screens. The processed materials are transferred by combinations of conveyor belts, bucket elevators, and screw conveyors (Tepordei, 1992).

Many Puget Sound area gravel producers have ready-mix concrete and/or asphalt batch plants on the property or within a short haul distance (White and others, 1990). Some companies also lease pit-floor space and sell gravel to other companies that manufacture products such as pre-cast concrete products. Many gravel producers also have vehicle fueling and maintenance facilities located near the gravel excavation site.

IV. Direct mining effects

The essence of gravel mining is the act of physically extracting the gravel. Everything else that happens between the extraction of the gravel and its end use should be classified as "associated activities". The primary environmental effects of gravel excavation are related to physically disturbing the aquifer materials and exposing the aquifer to the air by forming a lake. For mines excavating above the water table, the environmental problems are very similar to those posed by stormwater disposal in any other extremely environmentally sensitive area.

Physical Effects

Turbidity

Turbidity is caused by the presence in water of suspended material such as clay, silt, fine organic material, plankton, or other fine inorganic or organic matter. Ground water normally has turbidity levels below 1.0 NTU (nephelometric turbidity units) and levels above 5.0 NTU are easily seen in a glass of water (U.S. E.P.A., 1992). Turbidity can have other undesirable effects, but it is regulated in public water supplies primarily because it interferes with the action of chlorine as a disinfectant and provides organic precursors that may help form trihalomethanes (Driscoll, 1986). For this reason, the Washington State Department of Health established a primary maximum contaminant level of 1.0 NTU for turbidity. In addition to reducing the effectiveness of disinfection, turbidity may also affect the taste of drinking water and cause sedimentation or staining of household fixtures. Other possible effects are clogging of well screens and wear on pumps or other machinery. In locations where ground water discharges to surface water, increasing the turbidity of ground water may have a harmful effect on the surface water ecosystem.

Gravel mine operators try to avoid gravel deposits that contain large amounts of silt and clay, which reduce the value of the deposit. Many gravel products must have a very low content of fine materials, and the need for extensive washing raises the cost of production. Examples are concrete aggregate, in which clay and silt reduces the strength of the concrete, and gravel for septic system drainfields, in which silt and clay can produce clogging of the drainfield. A high content of fines in the gravel deposit not only produces a large volume of turbid wash water, it also creates a problem of how to dispose of large amounts of silt and clay waste products. In general, even the best gravel deposit will contain some silty layers or some silt or clay coating on the gravel.

Ground water turbidity may be increased by physically disturbing the aquifer materials by mining, gravel washing, or by incidental generation of turbid runoff from erosion of disturbed areas. This mining-related turbidity can enter the aquifer either by direct discharge into ground water exposed by mining or by infiltration into coarse materials exposed by mining operations.

Gravitational settling and interstitial straining are the two main mechanical mechanisms by which turbidity is reduced in porous media, (Behnke 1969). Gravitational settling occurs when the greater density of suspended particles causes them to sink out of the water. Interstitial straining occurs when transported particles are filtered out as the turbid solution flows between the grains of fine sediments.

Friedman and Sanders (1978) summarized the results of other studies and concluded that very-coarse-silt-size spheres in still water would settle at 0.27 cm per second or less. Gibbs and others (1971) measured the gravitational settling rates in still water for silt-size glass spheres in water. They found that coarse-silt-size spheres (0.05 mm) settled at 0.2 cm per second and they predicted that fine-silt-sized spheres (0.01 mm) would settle at less than 0.01 cm per second, or 28 feet per day.

Most actual silt to clay-size particles are flattened or tabular rather than spherical and so would settle at a rate less than similar-size spheres because of their lower mass to diameter ratio. Based on a settling rate of less than 28 feet per day as given above, silt-size turbidity particles should settle out of suspension in a gravel pit lake relatively rapidly, probably within several days.

As shown in Table 1, very fine clay particles can be as much as 40 times smaller than fine-silt-size particles. The empirical formula developed by Gibbs and others (1971) predicts that fine-clay-size spheres with a diameter of 0.00025 mm would settle at a rate of 0.000005964 cm per second in still water at 20°

C. This is approximately 0.017 feet (0.2 inches) per day. This suggests that the very finest clay fractions of turbidity could settle out on a time scale measured in weeks or months. This settling rate is substantially slower than horizontal ground water flow rates in Thurston County gravels. Sinclair and Hirschey (1992) estimated the mean ground water flow velocity in the Grand Mound/Scatter Creek area to be 16 feet per day, with values ranging from 1.3 to 60 feet per day. Given a settling time of weeks or months and the rapid flow rates of some Thurston County aquifers, clay particles could travel relatively long distances. Using the settling rate of 0.017 feet per day, it would take approximately 1175 days (3.2 years) for fine clay to settle 20 feet. In that time, traveling at 16 feet per day, the clay could travel approximately 3.5 miles.

Table 1 Grain Size Scale Used By American Geologists (Dietrich and others, 1982)			
Size	Grade Name	mm	mm
Silt	coarse	1/16 - 1/32	0.062 - 0.031
	medium	1/32 - 1/64	0.031 - 0.016
	fine	1/64 - 1/128	0.016 - 0.008
	very fine	1/128 - 1/256	0.008 - 0.004
Clay	coarse	1/256 - 1/512	0.004 - 0.002
	medium	1/512 - 1/1024	0.002 - 0.001
	fine	1/1024 - 1/2048	0.001 - 0.0005
	very fine	1/2048 - 1/4096	0.0005 - 0.00025

There are several effects that could modify the settling rates given above. Chemical action could cause clay particle to clump together, or flocculate, increasing the settling rate. Water currents could help keep particles in suspension longer than would be possible in still water, decreasing the settling rate.

Clay minerals consist of interlocking sheets composed of silicon and oxygen atoms. These sheets are bound together by positively charged cations such as sodium, calcium, and potassium. The chemical sites that are occupied by these cations cause the clay particles to have a negative surface charge when those cation sites are empty. For this reason, suspended clay particles have a tendency to clump together in the presence of dissolved cations. This is why clay particles settle so quickly when they reach salt water. Thurston County ground water is generally low in dissolved cations, so the effect of chemical flocculation on clay settling rates would be expected to be very small.

Sediment particles that are heavier than water can be kept suspended by the action of moving water. The faster the water is moving, the larger the particles that can be kept suspended. Newport and others (1974) report studies indicating that currents of 0.18 miles per hour would suspend brick clay and currents of 0.72 mph would move fine mud and loam. The fastest ground water recorded in Thurston County, as discussed above, is 60 feet per day which equals 0.0005 mph. This is well below the amount of current needed to keep even the finest sediments in suspension.

Sediment clogging by turbid waters is a key factor in determining how far gravel mining related turbidity will travel. Behnke (1969) examined gravitational settling and interstitial straining together in a study of surface infiltration for artificial ground water recharge. He applied solutions containing 43-203 ppm of turbidity derived from suspensions of two different natural soils. The turbid solutions were applied to two sieved sands and two natural soils inside 85 cm long columns. The soils were packed to reproducible densities and the vertical head of the turbid solutions were kept constant.

Behnke found that surface deposits that reduced flow developed within eight hours in all cases studied. With the solution containing 203 ppm turbidity, there was more than a six-fold reduction in flow in one hour. With a solution containing 43 ppm turbidity, it took slightly less than 4.5 hours for a similar reduction in flow to develop (Figure 3). He concluded that clogging is essentially a surface process, with detectable reductions in flow as little as 0.50 cm below the surface. He found that gravitational settling was the initial clogging mechanism, with interstitial straining becoming dominant later. Other studies generally agree that filtration of suspended material happens mainly at the recharge surface, but feel that some colloidal particles (1.0 to 0.1 microns) can penetrate to "appreciable distances" (Nightingale and Bianchi, 1977).

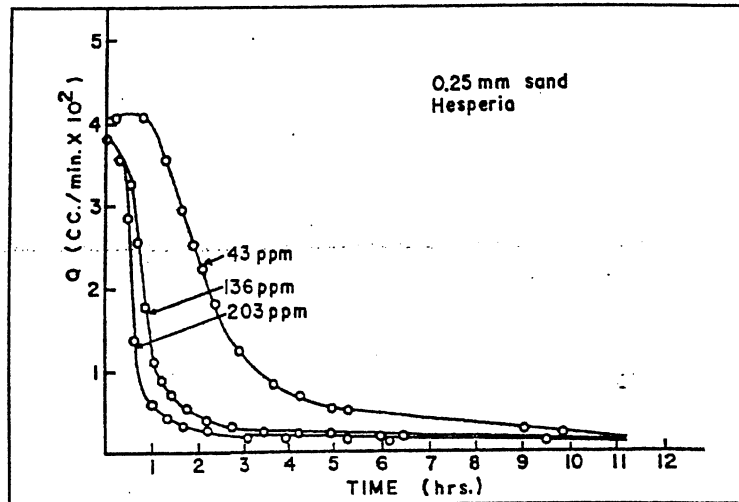


Figure 3 Flow rate of turbid solutions through fine sand as a function of time (from Behnke, 1969).

Behnke also found that clogging was less rapid with combinations of the finer soils and coarser turbidities, where the suspended particles and soil particles were most similar in size. For coarser textured soils (.25 mm sand), the high silt turbidity produced the most rapid clogging. For the finer textured soils (.10 mm sand), the high clay turbidity produced the most rapid clogging.

Behnke's study showed that the clogging layer becomes established within a matter of hours and that it takes place at or very near the surface. These results are most relevant to washing gravel or otherwise creating turbidity above the water table, where gravitational settling and water flow are parallel. In gravel pit lakes, these two processes occur in different locations in the lake because the force of gravity that governs gravitational settling is oriented vertically downward and ground water flow, which governs interstitial straining, flows horizontally.

Durbec and others (1987) found that the amount of clogging in gravel pit lake walls in France varied significantly depending on pit morphology, vegetation on the walls, bank materials, and water turbidity. They also found that a superficial zone on the upper walls of gravel pit lakes is not greatly affected by clogging and another zone along the bottom and lower part of the walls of the gravel pit lake (Figure 4) is where most clogging occurs. Their study also found that clogging in the bottom of the gravel pit lake did not vary significantly throughout the pit and that the majority of the clogging was found in the upper 10 cm of the bottom sediments.

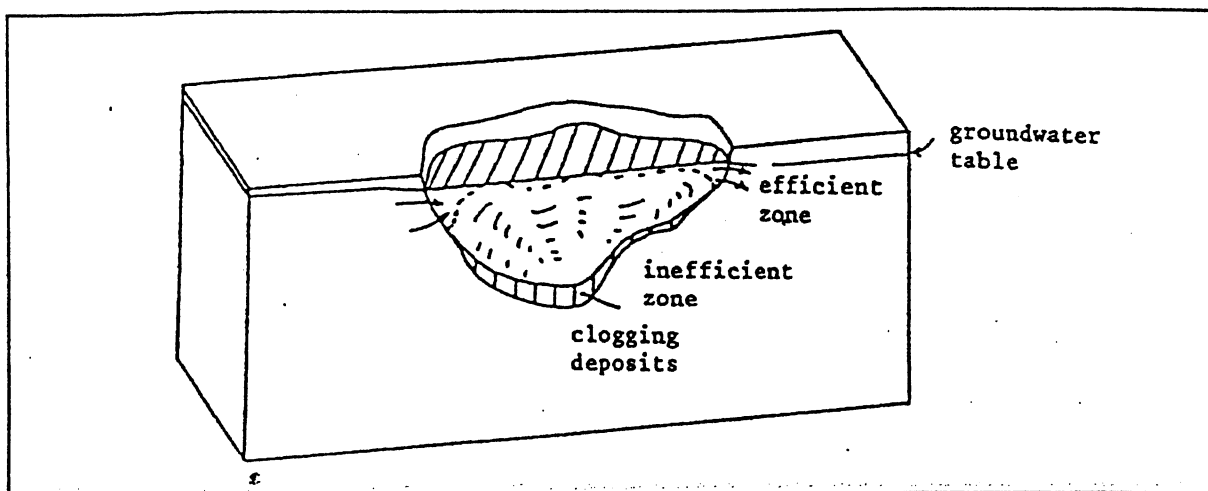


Figure 4 Sediment clogging patterns in gravel pit lakes (from Durbec, 1987).

Landberg (1982) cites German research showing that, due to ground water flow, clogging of the banks should start on the downgradient end of the gravel pit lake. If clogging was extensive, it could raise the water level in the lake, which could also raise the water level in the aquifer up-gradient from the lake. Landberg reported that Swedish studies had not found any lake with significant clogging. He suggested that this could be explained by the relatively recent age of the pits (less than 25 years).

The studies described above produce a clear picture of the behavior of turbidity in gravel pit lakes. The silt fraction of turbidity should settle or be filtered relatively rapidly, probably over a matter of hours or days. The finer clay fraction could remain suspended for a much longer period of time. Sediment clogging happens primarily on the surface of the bottom and lower sides of the lake. The upper part of the banks of the gravel pit lake is largely unclogged and permits efficient hydrological exchange between the lake and the aquifer.

This information can be compared to data from several sites in the Pacific Northwest. The most complete data available on the movement of low levels of turbidity through aquifer materials is from collector wells, called Ranney Collectors. These systems draw in water through horizontal screened pipes placed beneath rivers or lakes (Figure 5). Surface water infiltrates into the screened pipes, flows into a central connector, and is pumped into the water system (Mikels, 1992). The horizontal screened pipes are jacked into place so that they will not disturb the sediments below the surface water body. The studies cited involved collection pipes located from 8 - 21 feet below the river bottom.

Comparing the river and collector turbidity data shows that relatively low levels of turbidity are greatly reduced by passage through a short distance of aquifer materials. The remaining turbidity in the collector samples is probably the finer clay fraction.

In response to local complaints, the Oregon Department of Environmental Quality studied well turbidity in the vicinity of a gravel extraction and washing operation near Milton-Freewater, Oregon (Mathiot, 1978). The aquifer below this site consists of unconsolidated alluvial fan gravels of very high permeability.

This DEQ study found a turbidity plume that extended more than a mile to the north (downgradient) of the gravel operation. The average turbidity of the water being discharged from the washing operation into the pond at the site was 2,737 nephelometric turbidity units (NTU). Nearly all wells sampled within the

first 6,000 feet of the turbidity plume were measured at 5 NTU or more. Many wells within the first 3,000 feet of the plume had turbidity levels of 10 NTU or more. Nearly all wells outside the plume had turbidities of 2 NTU or less.

This data shows again that only a small percentage of the initial turbidity is transmitted through aquifer materials. However, if the initial turbidity levels are high enough, significant amounts of turbidity can be carried over a mile through very highly permeable aquifer materials. This should not automatically be taken to mean that a 6,000 foot buffer zone around gravel mining operations is necessarily warranted. The actual distance that turbidity would travel would depend on local factors, which should be evaluated in a geohydrologic report before the start of mining operations.

Simple gravel excavation probably will not produce turbidity levels that would be detectable off the mine site. Because of the higher turbidity loads they generate, gravel washing operations are more likely to produce turbidities that can migrate significant distances. The distance turbidity will be transported in ground water will vary between different sites depending on the type and size of

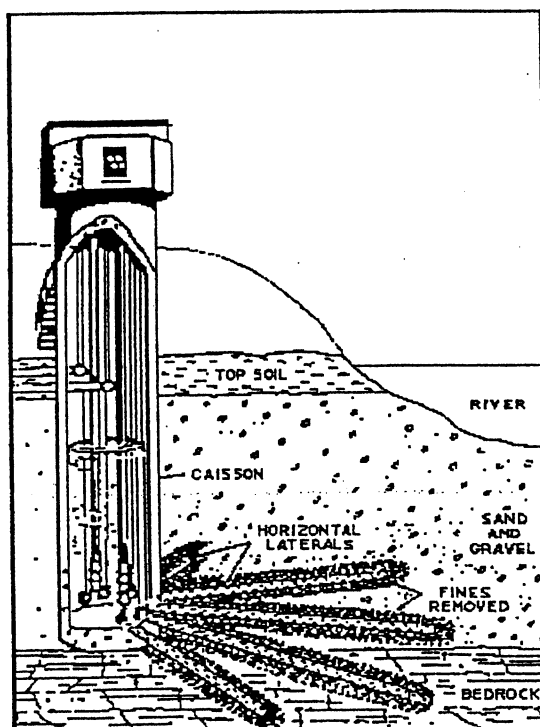


Figure 5 Cross-section through a Ranney Collector system (from Mikels and Bennet, 1978).

System	Mean Turbidity (NTU)	Standard Deviation (NTU)	River Source	River Turbidity (NTU)
Boardman, OR ¹	0.04	0.02	Columbia	0.9 - 13
Fort Benton, MT ¹	0.05	<0.01	Missouri	1.5 - 34
Kalama, WA ¹	0.30	0.03	Kalama	1.0 - 4.0
Port Angeles, WA ¹	0.11	0.04	Elwha	0.6 - 35
Sonoma County, CA ¹ Collectors 1 & 2 Collectors 3, 4, & 5	0.12	0.04	Russian	1.1 - 20
	0.05	0.02	Russian	1.1 - 20
Kennewick, WA ²	0.13	0.04	Columbia	2.1 - 8.6
Kalama, WA ²	0.31	0.03	Kalama	0.9 - 4.6

1) Mikels and Bennett, 1978. Data are 1988 means.

2) Mikels, 1992. Data represent 10 samples from 12/87 to 3/90.

the particles causing the turbidity, the pore sizes of the aquifer media, the ground water flow velocity, and the ionic strength of the ground water.

There are many causes, other than gravel mining, that can increase turbidity in ground water (Table 3).

Sandhu and others (1977) studied samples from 98 water sources in South Carolina and found that iron and colloidal material were chiefly responsible for turbidity in 19 percent of the water sources. The U.S. Geological Survey, in its aquifer characterization study of northern Thurston County (Dion and others, 1994) found iron levels exceeded the state maximum levels (MCL) in 16 percent of the wells sampled and that manganese exceeded the MCLs in 30 percent of the wells sampled.

Table 3 Non-mining Sources of Ground Water Turbidity		
Source	Cause	Reference
poor well development	fine sediments are washed from the aquifer by well pumping	Driscoll, 1986
changes in well pumping rates	turbulent flow disturbs sediments	Trela, 1986
corrosion of distribution pipes	colloidal and particulate iron	Sandhu and others, 1978
artificial ground water recharge (stormwater)	turbid surface waters are discharged into ground water	Behnke, 1969 Nightingale and Bianchi, 1977
sulfur turbidity	chlorination of waters containing hydrogen sulfide	Lyn and Taylor, 1992
turbid surface waters	turbid surface waters entering ground water during floods periods	U.S. E.P.A., 1992
changes in chemical conditions (Eh-pH)	dissolved Fe, Mn, and other substances form colloidal suspensions	Trela, 1986
high organic matter content	water source located near a marsh or swamp	Driscoll, 1986

Because of the many potential causes of turbidity in ground water, it may be difficult to determine the cause in a specific case. If sufficient pre-mine monitoring data is available, it may be possible to show whether the turbidity was a pre-existing condition unrelated to mining. If there are monitoring wells at the mine site that were sampled at the appropriate time, they might show the amount of turbidity generated by mining. Tracers, such as fluorescein dye, can be used in some cases to determine flow rates and directions. Each of these methods has some limitations. Often pre-mining sampling data is not available. Often monitoring wells are not present or were not sampled when the alleged turbidity was being generated. It is difficult to use tracers over long distances and introducing chemical tracers into a drinking water supply may be a controversial technique.

Another way to determine whether a particular gravel mine may be the cause of a turbidity problem is to look at the distance from the mine to the well of concern and the timing of the turbidity problem. If these factors and the approximate ground water velocity are known, it may be possible to determine whether turbidity related to the mine is a potential cause of the problem. Similarly, turbidity problems in wells located up-gradient from the mining operation in most cases can not be a result of the mining activity.

Noble (1987) applied this method to show that a gravel pit in northern Lewis County was not the source of turbidity in a near-by well. The well was located 600 feet away from the edge of the gravel pit, hydrologically connected by sands and gravels of high permeability. The owners of the well complained of high turbidity 24 hours after flood waters from the Skookumchuck River had entered the gravel pit. The neighbors asserted that the pit was the source of the turbidity in their well, and requested that the pit operators install a berm to remedy the situation. Noble calculated that the ground water flow speed in that area was in the range of 1.3 - 13 feet per day, which is a typical range for ground waters in this area. It would be necessary to have a flow rate of 600 feet per day for the gravel pit to have been the source of the observed turbidity. Noble proposed as an alternate explanation that the rapidly rising water table caused by the flooding mobilized clay and silt in the aquifer in the immediate vicinity of the well.

The sequence of mining operations can have a major effect on sediment clogging and turbidity transport. If gravel excavation starts at the up-gradient end of the gravel deposit and proceeds downgradient, the incipient aquifer clogging layer will be excavated along with the gravel, eliminating a significant form of aquifer protection. If mining starts at the downgradient side of the deposit, the clogging layer will be preserved as mining proceeds up-gradient. Development of the clogging layer can also be enhanced by early reclamation of the downgradient face of the excavation to increase vegetation growth.

Planning the gravel mining operation to preserve the clogging layer is a possible best management practice. It can be useful in aquifer protection while still being low in cost to the mine operator. One disadvantage of using this technique to maximize filtration is that it could produce enough clogging to cause a "dam" across the aquifer, potentially affecting local ground water flow patterns. The effect of this local change in aquifer permeability is not likely to be perceptible for more than a short distance from the site. Another disadvantage is that this technique may be in conflict with the most efficient sequence of mining operations for the site.

Water temperature effects

During the summer months, when the air temperature is greater than the ground temperature and input of heat from the sun is high, opening a gravel pit lake would tend to increase the temperature of the water passing through it. During the winter, the air is generally cooler than the ground, input of solar heat is greatly reduced, and water passing through a gravel pit lake would tend to be cooled.

In northern Thurston County, ground water temperatures ranged from 8.5° to 14.5° C (47° to 58° F). 94 per cent of the samples were between 9° and 12° C (48° to 54° F). This means that, based on average Olympia monthly temperatures, the effect of gravel pit lakes would be to cool ground water from October to April. The same effect would cause heating from May to September.

This analysis does not fully account for the effect of solar heating, which is the largest source of heat input to lakes (Wetzel, 1983). Air temperature is partly a result of solar heating, but the direct input of sunlight is not considered here. This solar heating would tend to increase the summer heating action.

This is not expected to be large, due in part to the relatively rapid rate at which ground water moves, compared to other types of lakes.

Sinclair and Hirschey (1992) estimated the mean ground water flow velocity in the Grand Mound/Scatter Creek area to be 16 feet per day, with values ranging from 1.3 to 60 feet per day. This would mean that average ground water in that area would require at least 62 days to pass through a 1,000 foot long gravel pit lake. The average Olympia temperature for July is 63.1° F and the average for August is 62.7° F. This is approximately 9 to 15 degrees F higher than typical ground water temperatures. This suggests that, depending on the size of the gravel pit lake, local ground water temperatures could show seasonally variable temperature effects of up to several degrees from gravel pit lake formation. Because of the high thermal inertia of aquifer materials and the effects of dilution, the effect would be expected to be limited to an area several hundred feet downgradient of the gravel pit lake.

Water level effects

When a lake is formed by excavating gravel out of an aquifer, it inevitably causes a shift in the local ground water surface (Landberg, 1982). Before the lake was developed, the local water table was a gently sloping surface, with ground water flowing down the ground water gradient toward the areas where the water table is the lowest. The water table was sloping because the aquifer materials had a certain resistance to the passage of ground water.

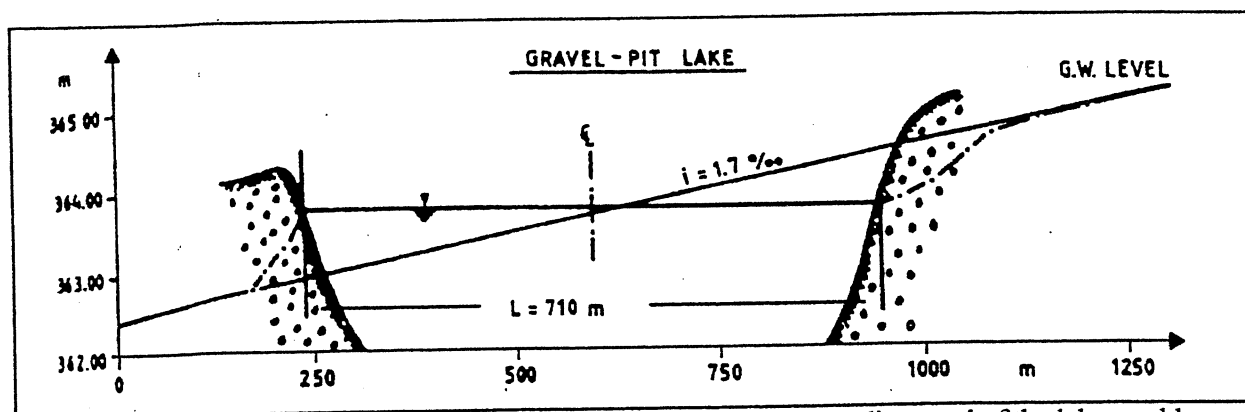


Figure 6 Creating a gravel pit lake raises water levels on the downgradient end of the lake, and lowers them on the upgradient end (from Landberg, 1982).

As soon as a lake is excavated, this resistance to the flow of ground water is removed. What was formerly the ground water table at the site of the lake becomes the lake surface. Like all open bodies of water, it is horizontal and the water level in the lake at its center is equal to the old ground water table at that same point (Figure 6). This means that ground water levels immediately adjacent to the pit will be lowered at the up-gradient end of the lake and raised at the downgradient end. The amount of raising or lowering at the lake boundary is approximately one-half the length of the lake times the local ground water gradient. This effect is accentuated if a series of gravel pit lakes are formed parallel to the ground water gradient (Morgan-Jones and others, 1984)

In Thurston County, ground water gradients range from 0 to approximately 50 feet per mile (Noble and Wallace, 1966). Most ground water gradients are less than 20 feet per mile. This means that a ground water lake half a mile long in the direction of ground water flow, with a gradient of 20 feet per mile

would raise the water table approximately 5 feet at the downgradient boundary and lower the water table approximately 5 feet at the up-gradient end.

Geoengineers (1992) studied a proposed gravel pit in southern Thurston County that would create a gravel pit lake approximately 4,400 feet long. The ground water gradient in that area is approximately 1 foot per mile. Geoengineers computer modeling estimated that the resulting lake level would be 4.6 feet above the ground water surface at the up-gradient end of the lake and 4.6 feet above the ground water surface at the downgradient. They estimated, based on aquifer testing and computer modeling, that the effect of creating the lake would result in lowering the water table 0.5 feet at a well 300 feet up-gradient.

Removing mined material from the aquifer

Removing gravel from below the water table is equivalent, in short-term effects, to removing the same volume of water from the aquifer. After mining has finished, the effect is to increase the storage capacity (coefficient of storage) in the area of the lake (Landberg, 1982). This happens because the porosity is increased from approximately 25-40% for sand and gravel to 100% for open water. This means that more water can be extracted from wells near the lake with less drawdown in the water table because of the large amount of water available in the lake.

Increased evaporation

Geoengineers (1992) found that creating a gravel pit lake in southern Thurston County would increase evapotranspiration, causing a decrease in ground water recharge of 4.6 inches per year for each acre converted to open water. This is consistent with the range of decreases in recharge of 0.8 to 4.5 inches per year per acre reported in Shope (1990) for similar situations in New Hampshire. The decrease in recharge of 4.6 inches per year per acre is equivalent to an evaporation rate of 0.24 gallons per minute per acre or 126,100 gallons per year per acre.

ARC/CAD GIS analysis shows that there are now approximately 107 acres of gravel pit lakes in Thurston County. The evaporation loss from these lakes is equivalent to ground water withdrawals of 5,044,000 gallons per year. A single new gravel mine proposed for the Violet Prairie area, if approved, would create 4 acres per year of gravel pit lake. Other extraction operations will create new lakes at a roughly estimated rate of 2 acres per year. This will produce a significant increase in the evaporative losses to ground water (Table 6). By the year 2023, this increase will amount to a 2.7-fold increase over the 1993 rates. If distributed evenly over the whole of Thurston County, these losses are probably not critical. But if concentrated in particular areas, they may be sufficient to have a measurable impact.

Year	Total Acreage	Evaporative Losses (gal./year)
1993	107	13,493,000
2003	167	21,059,000
2013	227	28,625,000
2023	287	36,191,000

Comparing the area of gravel pit lakes to other surface water bodies in Thurston County provides another perspective. ARC/CAD GIS analysis shows that there are 6,950 acres of surface water in Thurston

County. The 107 acres of existing gravel pit lakes amounts to 1.5 per cent of this area. The 287 acres of gravel pit lakes estimated to be developed by the year 2023 would be 4.1 per cent of the total area of the natural surface water bodies.

Water chemistry effects

Rasmussen (1985) compared the water quality in a gravel pit lake with water quality in the Big Sioux aquifer in eastern South Dakota. He found that the lake water had higher pH, lower alkalinity, lower calcium hardness, lower magnesium hardness, lower total hardness, lower iron and manganese, and lower total dissolved solids than water from up-gradient and downgradient wells. A significant difference in these parameters between the up-gradient and downgradient wells was not apparent in all cases. He attributed the difference in these parameters between the wells and the lake to aeration of the lake waters and biological activity. Similar water quality patterns and conclusions are found in other masters theses that studied the same gravel pit lake and aquifer system (Kothari, 1985; Perry, 1986) and in a study from Hungary (Perjes, 1982). All these authors concluded that the mere presence of a lake caused by previous gravel mining did not degrade ground water quality. In general, they found the effects of increased aeration that lake formation provided had a beneficial effect on water quality.

Labroue and others (1988) found measurable removable of nitrate from ground water in association with gravel-pit lakes. They found the highest denitrification in old unclogged lakes and no activity in recently-opened lakes or older, clogged lakes. In a separate paper, they suggest that reclaiming gravel pits with nitrate-fixing vegetation such as alder trees may improve water quality (Labroue and others (1986).

Interchanges between aquifers

Mining into ground water can potentially breach the hydrologic barriers that separate different aquifers. If this happens, water in the two aquifers can mix, potentially affecting the water quality or water levels in one or more of the aquifers. If the affected aquifers have different water quality, this can be an immediate problem. Even if the affected aquifers have the same water quality, loss of that barrier between aquifers may become important in the future if the water quality in one aquifer deteriorates. In addition to potential water quality effects, interchanges between aquifers can cause water level changes.

Some differences in water quality among Thurston County aquifers are shown in Table 4. The aquifers are listed in order from shallowest to deepest, with the Vashon Recessional Outwash (Qvr) on the left and Tertiary Bedrock (Tb) on the right. Dion and others (1994) found that deeper aquifers are more likely to have higher concentrations of naturally occurring constituents, such as iron, manganese, and calcium. They found that shallower aquifers were more likely to have human-caused constituents, such as nitrates and other septage-related compounds. The data given in Table 4 are averages for all of northern Thurston County. Local variations in water quality among aquifers may be greater.

Table 4 Average Water Quality In Thurston County Aquifers							
Constituent	Qvr	Qvt	Qva	Qf	Qc	TQu	Tb
Dissolved oxygen	6.5	5.7	5.7	4.0	2.2	0.2	0.5
Specific conductance	118	140	128	142	150	144	190
Sodium	5.2	6.0	5.8	6.0	6.7	7.6	20
Nitrate	1.0	0.95	0.84	0.33	0.25	<10	<10
Iron (ppb)	16	19	14	20	21	81	11
Manganese (ppb)	3	2	3	8	6	52	3
Hardness (as CaCO ₃)	41	52	51	54	57	54	71
Concentrations are in ppm unless noted. Specific conductance expressed as microsiemens per centimeter at 25° C.							

Washington State law related to the construction of water wells (Ch. 173-160-075) is very explicit that interconnections between aquifers are not allowed:

"In constructing, developing, redeveloping, or conditioning a well, care shall be taken to preserve the natural barriers to ground water movement between aquifers and to seal aquifers or strata penetrated during drilling operations which might impair water quality or result in cascading water."

In Thurston County, approximately 14 percent of existing gravel pits are located in areas where the surface soils are developed from the Vashon Till. This glacial hardpan unit is a primary aquitard that separates the overlying Vashon Recessional Outwash gravels from the underlying Vashon Advance Outwash sands and gravels. The fact that so many gravel pits are located close to a major aquitard suggests that the potential for causing intermixing of aquifers is significant.

A recent example of the effect gravel mining can have on aquifer barriers between aquifers is provided by the 1993 High Rock Aquifer break incident near Monroe in northwestern Washington. Workers cleaning up a material slough at the base of a gravel slope breached fine silty sand deposits that were acting as a confining layer for the High Rock aquifer (Garland and Liszak, 1994). The initial discharge from the breach was estimated at 2,000 gallons per minute (gpm). Over the course of several days, the flow decreased to 400-500 gpm. An estimated 25,000 cubic yards of material was eroded by the water, causing sedimentation in a stream, wetlands, adjacent property, and lake. Water levels in wells and discharges from springs were lowered as far as 1,500 feet from the break. It is estimated that water levels have dropped an average of four feet over an affected area of approximately 100 acres (Garland and Liszak, 1994). This incident clearly demonstrates the need for gravel operators to clearly understand to location of aquifer boundaries below their operations.

Physical disturbance of aquifer materials

When gravel is mined below the water table it disturbs the aquifer materials, which can have a number of physical and chemical effects. The main physical effect, as discussed above, is the generation of turbidity from suspended silt and clay particles. In most cases, gravel is relatively chemically stable in contact with water because any unstable components were removed by the erosional and depositional forces that formed the gravel deposit. The primary exceptions to this rule that are relevant to Thurston County involve calcium, and iron and manganese.

The volcanic rocks that form the Black Hills and Bald Hills contain largely basalt and andesite (Noble and Wallace, 1966). These rocks contain approximately 5-7 per cent calcium (Dietrich and others, 1982) within calcium feldspar and other calcium minerals. As these minerals weather, calcium can be liberated in significant amounts. This process can be accelerated if gravel deposits containing significant amounts of basalt or andesite are mechanically disturbed by mining or crushing and washing.

This potential addition of calcium is unlikely to have a harmful effect for two reasons. 1) Most Thurston County gravel deposits do not contain significant amounts of these volcanic rocks, which are highly undesirable in most types of gravel-based products because they are chemically reactive, lacking in physical strength, and produce clays upon decomposition. 2) Ground water in Thurston County is classified as moderately to highly aggressive. Aggressive waters have high dissolved oxygen or carbon dioxide contents, low alkalinity and hardness, and low pH (DeBarry and others, 1982). This means they tend to dissolve soluble materials from pipes and other plumbing materials that they contact. This can increase the amount of iron, lead, and copper delivered at the tap in drinking water supplies.

Thurston County ground water, based on data from the northern part of the county, is neutral to slightly acidic, with a mean pH ranging from 6.6 in the shallowest aquifer (Vashon Recessional Outwash) to 7.8 in the deepest (Tertiary Bedrock) (Dion and others, 1994). Sixty-four per cent of the samples in that study were soft and 30 per cent were described as moderately hard. Mean dissolved oxygen levels were moderately high, ranging from 6.5 in the shallowest aquifer to 0.5 in the deepest (Dion and others, 1994). The calculated Aggressive Index of average shallow northern Thurston County ground water is 9.4, which classifies it as highly aggressive (DeBarry and others, 1982). This means that an increase in dissolved calcium would be beneficial by reducing the aggressiveness of the ground water.

Viswanathan (1990) describes an Australian study in which dredge mining for rutile sands (titanium ore) increased the iron content of ground water from 1 ppm to nearly 20 ppm. The dredged sand was washed and the tailings, rich in iron and organic material, were redeposited in the excavated lagoons. Bacteria, feeding on the organic material, changed the iron from its insoluble oxidized state to the soluble reduced state.

Some aquifers in Thurston County, such as the Deposits of the Penultimate Glaciation (formerly Salmon Springs) are stained with iron oxides (Dion and others, 1994) and there are accumulations of bog iron in other locations (Valentine, 1960). Iron-stained gravel has a lower iron content than alluvial rutile deposits, which generally contain magnetite or other iron-rich minerals. In most cases, simply disturbing iron stained gravels would not liberate significant amounts of soluble iron. If abundant organic matter were present, such as manure from agricultural operations, it is possible that chemical changes caused by bacterial activity could increase the iron content in ground water. This potential liberation of iron may be counteracted in part by the effect of increased aeration in gravel pit lakes reducing iron levels, as discussed above under water chemistry effects. The presence of iron staining or accumulations is another

factor that should be discussed in the geohydrologic report prepared for permit applications for major gravel mining operations.

Batch plant discharges

Concrete batch plants are sometimes associated with gravel mining operations. Process water from these plants commonly has a very high pH (11 to 12) (Ecology, 1993). Some cement additives can also cause high biochemical oxygen or high nitrate concentrations in ground water. Some water quality data from concrete batch plants is given in Table 5. Storm water discharges from concrete plants can also introduce these same contaminants into ground water.

Table 5 Measured Concentrations of Some Pollutants in Concrete Washwater				
Parameter	Number of Analyses	Low	High	Mean
pH	8+	7.2	12.5	11.4
Nitrate	6	0.3	24	6.8
Chloride	3	15	96	55
Sulfate	1	333	333	N/A
Total Dissolved Solids	4+	103	3600	2258
BOD ⁵	7+	1	30	11.1
Chemical Oxygen Demand	4+	<6.8	188	86
Total Organic Carbon	4	16	54	32
Total Phosphorus	2	0.01	0.29	N/A
Oil and Grease	6+	<1	33	19
Iron (total)	2	0.23	0.92	0.58
Total Suspended Solids	2+	1	45	N/A
Alkalinity	3	57	2180	1056
All measurements are given as parts per million (ppm). Data source is Department of Ecology (1993)				

Asphalt batch plants use different raw materials and produce a product that is very different from concrete. The ingredients used in making concrete are generally highly reactive, while asphalt is more inert. Asphalt is also highly viscous and if spilled cannot penetrate into the ground. Asphalt plants do use a lot of complex machinery, which requires cleaning, lubrication, and maintenance. In addition, fuels are required to heat the asphalt and keep it in a semi-liquid form. Leaks, spills, accidents, and run-off from equipment and fueling areas can produce stormwater discharges that contain significant amounts of a variety of

chemicals, fuels, and other potential contaminants. This stormwater is the primary source of ground water risk related to asphalt plants. If the storm water is kept free of contamination and properly treated, the threat to ground water is relatively low. If storm water becomes contaminated or is disposed improperly, the possibility of measurable ground water contamination is significant.

Hydrocarbon spills during mining

Washington Department of Ecology files were searched for information related to sand-and-gravel mining operations. The search included 94 files from a 12-county area overseen by WDOE's Southwest Regional Office in Olympia. Representative material from several more counties (King, Snohomish, and Skagit) was obtained at WDOE's Bellevue Office through the efforts of the Thurston County Citizens' Planning Association.

These files reveal more than 20 inspections or complaint investigations that cite problems with hydrocarbon spills and/or oil and fuel containment, storage and handling procedures. None of these reports confirms damage to groundwater or quantifies the area affected. It should be noted that these incident reports are only the regulatory agency's side of the incident and may not represent the full story. In a few cases removal of contaminated soil was required and in at least one instance a Spill Prevention Countermeasure Control Plan was initiated. (required by U.S. DOT regulations if more than 660 gal of aboveground oil storage on site).

Definite statements regarding ground water are not usually given and all the recorded incidents involve potential but unverified effects. There are occasional comments such as: "no contamination from the surface has reached the groundwater" or "migration of petroleum contamination through the soil did not occur". None of these reports confirms damage to ground water or quantifies the area affected by the problem. Follow-up sampling is rarely mentioned, and when noted, it is generally to verify the removal of petroleum contaminated soils. These samples are invariably for total petroleum hydrocarbons in soils, not groundwater. Follow-up ground water sampling results were not on file for any of the incidents.

Wells down-gradient from two gravel mines in Thurston County and one in Lewis County were sampled for total petroleum hydrocarbons as part of this study. No detectable hydrocarbons were found, at a detection limit of 0.5 ppm.

These incident reports and limited sampling are not a quantitative assessment of discharges from gravel mining operations, but they do provide some information about the relative frequency and type of hydrocarbon release incidents. While not common, incidents of this type represent a significant source of risk to ground water. The general lack of ground water quality monitoring for appropriate parameters makes it impossible to define the exact degree of risk.

Discharges to surface water

In some cases, ground water does receive a substantial amount of recharge from surface waters. This is particularly common during winter months when surface water levels are high due to abundant rainfall. If ground water is being recharged by surface water, then any contaminants discharged to surface water by a mining operation could be indirectly introduced into ground water.

Department of Ecology records contain numerous gravel-mining-related incidents involving surface water (Appendix C). WQ sampling and analysis results not usually part of these records and if present are generally for pH and turbidity. Typical problems concern high-pH process water overflow from concrete batch plant ponds, fuel spills directly to surface waters from broken pipelines or damaged tanks, and turbid stormwater runoff. Few extraction operations (two in the files examined) have NPDES permits, although they are frequently recommended in reports.

Discharges of these types to surface water can clearly have negative effects on plant and animal life and their habitat. In Thurston County, it has been well documented in studies on the Deschutes River and Scatter Creek that large amounts of water are interchanged between surface and ground water (Dion and others, 1994; Sinclair and Hirschey, 1992). Discharge of gravel-mining-related contaminants to surface water in an area of ground water recharge would have an effect similar to discharging those contaminants into a gravel pit lake. The primary difference would be that moving surface water would tend to dilute and transport the discharge waters.

Post-mining effects

Solid waste disposal

Abandoned gravel mines have traditionally been attractive sites for solid waste disposal. This has often taken place without permits or regard for the consequences to ground water. Because of their extremely high aquifer susceptibility, ground water contamination has often taken place.

Sweet and Fetrow (1975) studied an abandoned gravel pit in northwestern Oregon in which 3,000 tons of wood wastes had been deposited. Leachate from the wood wastes lowered the pH, increased iron and manganese levels far above background, and caused high levels of lignin-tannin. These effects rendered a number of down-gradient public and private wells unusable. Goldthorp and Hopkin (1972) documented the migration of high levels of liquid industrial wastes that had been deposited in an abandoned gravel pit. Contamination of ground water from paint wastes deposited in an abandoned gravel pit is documented by the U. S. Agency for Toxic Substances and Disease Registry (1989). Morgan-Jones and others (1984) documented serious degradation of ground water quality down-gradient from abandoned gravel pits west of London that had been filled with a variety of waste materials. Numerous other well-documented cases are on record.

Most sites identified as solid waste problems in Ecology records did not have Solid Waste Disposal Permits. Typical problems involved demolition material (concrete, asphalt), dumping/storage of woodwaste and petroleum contaminated soils at unpermitted pit sites. No follow-up monitoring of groundwater was conducted except at the Lakeside (Pacific Sand and Gravel) pit at Carpenter Road, which had to meet landfill closure requirements after the fact. The sampling results indicated that "no tested state Primary Maximum Contaminant Levels were exceeded in any of the surface or groundwater samples collected . . . state Secondary Maximum Contaminant Levels for manganese and iron were exceeded in samples from some domestic wells and all site monitoring wells". No other data to substantiate or quantify groundwater effects was found in any of the files surveyed.

There can be no doubt that poorly controlled disposal of solid wastes into gravel pits can lead to serious ground water contamination. The evidence for this is so compelling that the worst practices of the past regarding waste disposal into gravel pits must be absolutely forbidden.

Biological effects

Gravel pit lakes have the potential to attract migratory waterfowl. These birds could potentially increase nitrate levels in ground water if present in large enough numbers. No data is available on these effects and any conclusions would be speculative.

If gravel pit lakes were accessible to livestock, nitrate and bacteriological levels could potentially be significantly increased. It has been well documented in studies of the Henderson, Eld, and Totten Inlet watersheds that higher fecal coliform and nitrate levels are found in areas of streams where livestock have access to surface water or where manure storage drains to surface water (Taylor, 1984, 1986).

V. Cumulative Effects

The total area of past and present gravel excavations is 1,064 acres as shown in Figure 7. This does not include the 44 known borrow pits, which are gravel excavations less than three acres in size. Assuming an average size of one acre for each borrow pit raises the total estimated mined area to 1,108 acres. The estimated area of ground water exposed by gravel mining is 40 acres. The total area of Thurston County is 487,040 acres, so gravel mining has taken place on 0.23% of the county's lands.

The gravel mines with local and DNR permits are shown in Figure 7 and listed in Appendix A. There are 52 mines with DNR permits comprising 2,215.4 acres. There are also numerous other mines not listed that are classified by DNR as inactive or terminated.

Gravel resources of Thurston County

An attempt was made to map the potential gravel resources of Thurston County. A map was developed from digital Washington Department of Natural Resources maps of Thurston County soils that included the following soils series:

- Baldhill very stony sandy loam
- Everett very gravelly sandy loam
- Grove very gravelly sandy loam
- Riverwash
- Spana gravelly loam
- Spanaway gravelly sandy loam
- Spanaway stony sandy loam
- Spanaway-Nisqually complex
- Tenino gravelly loam

Based on their textures, these were determined to be the soil types suitable for use as gravel. When this digital map was completed, the digital coverage of known gravel extraction sites was overlain to check whether it was consistent with the known patterns of gravel mining.

When the two maps were overlain, the map of known gravel extraction sites did not agree well with the predicted gravel resources. A significant number of gravel pits lay outside the area shown to be suitable for gravel extraction, based on soil textures. To help resolve this problem the map of gravel pits was digitally overlain on a map of the geology, prepared by the U.S. Geological Survey.

Digital coverage for geology is currently only available for the northern part of Thurston County, as studied by Dion and others, (1994). This coverage included 76 per cent of the mined gravel acreage in the county, so it is a good basis for analysis. This showed that in the northern part of the county, 86 per cent of the area mined for gravel lies within the Vashon Recessional Outwash. 14 per cent of the area mined lies beneath areas mapped as Vashon Till. Vashon Till, also known as glacial hardpan, is a compressed mixture of clay, silt, sand, and gravel not usually thought of as being suitable for gravel extraction. However, Vashon Till is commonly closely associated with coarse sands and gravels, which are the probable target of the mining activities.

Soil maps are based on the materials in the first five feet below the surface. Because mining operations can excavate sand and gravel substantially below that depth, they could potentially mine in some locations not shown as suitable on the soils map. Additional GIS analysis will be conducted to refine the prediction of gravel resources until it agrees with the data on gravel mine locations. This map and information will be presented in the final draft of this report.

VI. Summary and Conclusions

As of 1993, gravel mining had taken place on approximately 1,108 acres in Thurston County, which is 0.23 per cent of the county's surface area. There are now approximately 40 acres of gravel pit lakes within the county, which is equivalent to 0.6 of the total area of surface water in the county. By the year 2023, it is estimated that there will be 220 acres of gravel pit lakes, equaling approximately 3.2 per cent of the total area of surface water in the county.

The environmental effects of gravel mining on ground water vary widely, depending on the specific activities that are taking place. In order to evaluate these environmental effects, it is necessary to view each gravel mining operation as the sum of the environmental effects of these component activities. Each associated activity adds an additional increment of risk, which varies in magnitude with the type and scale of the associated activity.

The simplest form of gravel mining, excavating well above the water table with no associated activities such as vehicle maintenance or asphalt batch plants, causes a relatively low risk to ground water quantity and quality. Because the protective soil layer has been removed, these types of excavations are extremely sensitive to the introduction of any type of contamination. But this type of mining, because it is essentially a relatively simple process of loading unconsolidated materials, does not pose a serious risk of introducing those contaminants.

Mining below the water table and into an active aquifer brings some additional minor risks to ground water quality. This includes the potential to increase ground water turbidity and iron content, and to affect local water levels. The only cases on record in which turbidities downgradient from gravel excavations have been increased significantly are when gravel washing operations are involved. Significantly increasing the iron content of ground water by physically disturbing the aquifer materials requires a combination of heavily iron-coated aquifer materials, organic material, and bacteria that is rather unusual. For the geological conditions found in Thurston County, the additional risk presented by simple excavation within an aquifer is small. Adequate management and proper enforcement of a well-designed set of best management practices is necessary to keep this risk at an acceptable level.

Concrete batch plants represent a more serious threat to ground water quality, particularly if the process waters are discharged to ground water without adequate treatment. These process waters can have high

treatment of those waters will have a measurable and unacceptable effect on ground water. Concrete batch plants, especially if there is any form of discharge, would require a high degree of regulatory oversight if risk is to be held to an appropriate level.

Asphalt batch plants are present a lower risk to ground water than concrete plant, primarily from stormwater, vehicle fueling, and fuel storage and handling. Like concrete plants however, asphalt plants are a very significant source of risk to ground water and require adequate regulatory oversight and enforcement.

Petroleum leaks and spills resulting from vehicle fueling, maintenance, and washing are probably the most common major threat to ground water associated with gravel mining. This risk can be difficult to assess, because it is highly variable depending on the scale of these activities and the degree of oversight provided by the mining operation management. That a problem exists with petroleum leaks and spills is clear from Department of Ecology incident reports. Because of the lack of ground water monitoring and follow-up investigations on these incidents, the actual degree of ground water impact is unknown.

Creation of gravel pit lakes lowers the water table in wells up-gradient from the lake and raises them on the down-gradient side. This is a relatively local effect, but can measurably affect water levels in wells very near to the gravel pit lake.

Abandoned gravel pits have often been used for the disposal of various types of solid wastes. The adverse effects of this practice are very well documented and compelling enough that this practice should, in general, be completely discontinued. Only truly inert materials should be placed within gravel pits.

In summary, gravel mining has a complex array of environmental effects on ground water. This is largely because different mining operations will each have a different set of mining and processing activities that make up that operation. The environmental effects can only be understood by looking at each separate activity in the mining operation. Each of these component activities has a different environmental effect and requires a different management approach to risk reduction. Gravel mining, in general, poses low to moderate risks to ground water quality and quantity. But adequate regulatory oversight of project design and approval, operation, monitoring and closure, and adequate enforcement are necessary if risks are to be kept to an acceptable level.

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APPENDIX A
EXISTING SURFACE MINING PERMIT SITES - AS OF 1993

SAND AND GRAVEL					
DNR Permit	Operator Name	Sec.	Township	Range	Permitted Acres
*10442	J.D. Dutton, Inc.	36	19	2W	5
10835	Ted Sundberg	9	18	2W	11
*11214	Department of Transportation	18	18	2W	4.7
10473	Tom Martin Construction	28	18	2W	10
10895	Carl Willrich	28	18	2W	20
11472	William Jones Co.	29	18	2W	20
11821	William Jones Co.	29	18	2W	20
11832	William Jones Co.	29	18	2W	5
11419	Tom Martin Construction	2	18	1W	53
10938	Pacific Sand and Gravel	9/10	18	1W	12
10385	Olympia Sand and Gravel	10	18	1W	65
12168	Olympia Sand and Gravel	10	18	1W	33
10348	Pacific Sand and Gravel	10	18	1W	23
10706	Pacific Sand and Gravel	12	18	1W	70
10002	Holroyd Land Co. (Neilson/Pacific)	17	18	1E	330
10958	Thurston County	18	18	1E	13
12500	Nisqually Sand and Gravel/Lakeside	28/29	18	1E	80
12633	Hard Rock Crushing	13/24	17	3W	80
10601	Arthur J. Mell	13	17	2W	30
11988	Milton Emerick (Fairview S&G)	18	17	2W	80
*12116	Howard R. Larson	22	17	2W	10
12115	Howard R. Larson	28	17	2W	12.5
12577	Tom Martin Construction	28	17	2W	40
11016	Boe Sand and Gravel	6	17	1W	10
12615	Norman Hutson	6	17	1W	5
11766	Lacey Oaks Stables (Land Use Co.)	11	17	1W	9
12659	Great Western Supply/O'Neill	20/21	17	1W	10
12614	Milton Emerick	30	17	1W	20
10781	Thurston County	31	17	1W	10
*12217	Quigg Brothers - McDonald	29	17	2E	20
12592	Tom and Claudia Westbrook	9	16	3W	5
12094	Department of Natural Resources	10	16	3W	15
11337	James Hendricks	31	16	3W	5
*10457	Martin Sand and Gravel	34	16	3W	25

SAND AND GRAVEL					
DNR Permit	Operator Name	Sec.	Township	Range	Permitted Acres
10349	Cascade Materials, Inc.	3	16	2W	50
12285	Pacco, Inc.	5	16	2W	10
11902	Kellis A. Hamilton	25/36	16	2W	172
12014	Washington Asphalt Co.	28/29	16	2W	250
*11360	Department of Transportation	29	16	2W	32
12640	Granger/Breen	33	16	2W	50
11294	M.A. Segale, Inc.	5	16	1W	50
10453	Thurston County	5	16	1E	22
11703	Thurston County	24	16	2E	30
10443	Pacific Sand and Gravel	1	15	3W	18
10734	Dulin Construction, Inc.	2	15	3W	45
*11914	Martin Sand and Gravel	2	15	3W	9.2
10282	Cascade Hauling Co.	11	15	3W	28
11110	Lewis County	11	15	3W	13
10452	Martin Sand and Gravel	11	15	3W	30
*10189	Cascade Hauling Co.	14	15	2W	4
11089	Pacificorp Electric Operations	10/15	15	1W	150
12602	North Fork Timber Company	11	15	1W	10
					2,215.4

* Listed by DNR records as inactive or terminated

COAL					
DNR PERMIT	OPERATOR NAME	Sec.	Township	Range	PERMITTED ACRES
10145	Washington Irrigation and Development Co.	13/24	15	2W	4,000
					4,000
ROCK QUARRIES					
DNR PERMIT	OPERATOR NAME	Sec.	Township	Range	PERMITTED ACRES
10496	Kaufman Brothers Construction	19/30	18	2W	40
11831	Hodges Homes, Inc.	27	18	2W	2
12140	Jones Quarry	29	18	2W	65
12602	North Fork Timber	11	15	1W	10
					117

APPENDIX B

Potential Groundwater Problems Associated With Gravel Mining - Hydrocarbon Spills and Runoff Recorded in WDOE Files

Anderman Sand and Gravel (Belfair, Mason)	(1990) WDOE inspection in response to complaint. "Sheen caused by ... waste oil spillage from past practices ... will send letter."
Arlington Sand and Gravel (Arlington, Snohomish)	(1987) Complaint initiated inspection which revealed "significant quantity of various types of petroleum product in ponded and standing water on site" -- soil surface around shop "saturated with oils". Sources of contamination were: leaking equipment, poor house-keeping practices, fuelling operations and inadequate cover or containment for stored waste oils. Found past evidence of oil having been washed into Stillaguamish River. Upgradient location of fuel tanks/pumps allows spills to flow toward river. Investigator recorded soil saturated with fuel to 2½ or 3 feet in vicinity of fuel islands. Notice of Violation (RCW 90.48) and penalty of \$500.00 recommended.
Associated Sand and Gravel (Everett, King)	(1991) Follow-up investigation (soil borings and wells) on site from which underground storage tank (UST) had been removed disclosed total petroleum hydrocarbons exceeding Model Toxic Control Act clean-up standards. Contamination is below a paved area and may extend beneath an on-site structure. Engineering firm recommends leaving in place until facility closes.
B & L Construction and Trucking (Tacoma, Pierce)	(1991) Inspection of 15 acres storage and maintenance area near gravel mining operation revealed poor waste oil storage practices and uncontained leakage from equipment. Operator advised to hire waste consultant/recycling firm. Sampling and follow-up inspection advised but not found in file.
Cadman Sand and Gravel (Black Diamond, King)	(1991) Drop-in inspection: "major environmental contamination risk at this facility is associated with handling and storage of petrochemicals." including uncovered uncontained storage tanks. Waste water from truck washing operation has measured pH of 11 and flows uncontained down a haul road "where it is completely percolated into the ground." No State Waste Discharge Permit at time of inspection.
Corliss Redi-Mix (Enumclaw, King)	(1989) "Some problem with chemical/oil storage and handling." Spillage on ground and cement additives stored outside containment area. "Asked for better practices and cleanup".
Foran Landfill/Gravel (Tacoma, Pierce)	(1992) Urban Bay Action Team (UBAT) inspection. No containment of 6,000 gallon diesel fuel tanks. Gravel around smaller tank heavily stained with oil. Open container of used oil. Inspector suggests covering and berming.

Potential Groundwater Problems Associated With Gravel Mining -
Hydrocarbon Spills and Runoff Recorded in WDOE Files

Gilbert Western Corp (Camas, Clark)	(1989) Waste oil tank overflow (oil flow valve directed oil outside containment facility?). Not reported. Cleanup of oil contaminated soil and immediate repair of secondary-containment flow valve required.
Lakeside Industries (Aberdeen, Gray's Harbor)	(1989) Malfunctioning gauge caused rupture of 12,000 gallon above-ground storage tank during fuel delivery. Approximately 100 gallons diesel oil "saturated a small wetland area" connected to Chehalis River. Prompt response by Lakeside clean-up crew and proper agencies notified. Small section of wetland affected by removal of contaminated soil. No Spill Prevention Containment and Countermeasure Plan on site.
Lakeside Industries (Lacey, Thurston)	<p>Inspection revealed following violations at Hogum Bay Rd. asphalt plant:</p> <ol style="list-style-type: none"> 1. inadequate containment around all above-ground storage tanks (AGST) 2. cleaning of equipment with high pressure washer and use of petroleum/detergents released as "effluent discharge to ground and/or waters of the state." No NPDES or State Waste Discharge permit. 3. equipment maintenance pit "grossly contaminated" with petroleum and "suspected organic compounds". Soil removal required. <p>Lakeside submitted a Spill Prevention Control and Countermeasure Plan in accordance with 40CFR Sect. 112.7 approx. 1 mo. later - addressed all issues. No further correspondence found.</p> <p>(1987) Crane collapsed and crushed a diesel tank (approx. 200 gallons discharged to ground). No follow-up correspondence or sample data in file.</p> <p>(1981) Former site for plant on Carpenter Rd. reportedly had record of fuel spills to ground. Fuel storage area formerly had drain to gravel pit.</p>
Lakeside Industries (Anacortes, Skagit)	(1991) Complaint and follow-up investigation at asphalt plant. Approx. 1,000 cu yards of petroleum contaminated soil (PCS) was excavated and recycled through plant. "Confirmational analyses indicated that cleanup standards were met." On-site drums removed. No further correspondence?
Martin Construction (Lacey, Thurston)	(1990) RCRA compliance inspection of truck storage and maintenance facility. Spillage of oil and other hazardous materials; improper storage of waste oil. Wastewater from steam cleaning system discharged directly to ground. "Evidence of extreme oil contamination" - removal and treatment of soils required by WDOE. Connection with gravel mining operation not clear.

Potential Groundwater Problems Associated With Gravel Mining -
Hydrocarbon Spills and Runoff Recorded in WDOE Files

Meridian Aggregate (Granite Falls, Snohomish)	(1991) Removal of underground storage tank exposed an area highly contaminated with waste motor oil, apparently from many years of accumulation. Site had been used for equipment maintenance. "Visual observation disclosed veins of old motor oil" flowing. Site was excavated to remove all visible contaminated soil (sent to asphalt plant) and later sampling confirmed total petroleum hydrocarbons (TPH) within allowable limits.
Quigg Brothers- McDonald (Aberdeen, Gray's Harbor)	(1992) Fuel transfer valve system apparently tampered with causing diesel fuel release to containment area and to several storm drain catch basins. No notification of authorizing agency as per Ch. 90.56.280 RCW. Spill response plan and removal of petroleum-contaminated soils ordered by WDOE.
R & R Joint Venture (Vancouver, Clark)	(1991) Inspection terms operation "unsatisfactory". No containment for lube racks and fuel tanks. Poor solid waste disposal practices (waste oil, paint, cleaning compound, old batteries, etc.) on site.
Robison Construction (Tacoma, Pierce)	(1987) Improper on-site storage caused spillage of 1,000 gallons of diesel to ground and ultimately into Clear Creek. Tacoma-Pierce Co. Health requires clean-up involving excavation, testing of sediment residual BTX and landfarming of contaminated sediments. Spills prevention and management plan also required in lieu of permit revocation.
S & W Sand and Gravel (Puyallup, Pierce)	(1989) Oil contaminated soil confirmed by laboratory tests (Geotechnical Testing is of the opinion that "no contamination from the surface has reached the groundwater"). Soil to be removed to depth of 2 feet. S & W must stop allowing discharge of wastewater from steam cleaner to ground (oil/water separator will be required).
Tucci and Sons (Puyallup, Pierce)	(1991) Complaint investigation at gravel pit and asphalt plant. Diesel line from fuel tank to batch plant was underground and could not be determined to be leaking. Asphalt (source of complaint) leaked from above ground tanks but "hardens readily and does not appear to be a problem." Contaminated soil from another site stored in gravel yard - no cover or containment. Soil staining around diesel refueling area. Follow-up inspection to confirm covering of contaminated soils and spill prevention at diesel refueling area recommended - not in file.

Potential Groundwater Problems Associated With Gravel Mining -
Hydrocarbon Spills and Runoff Recorded in WDOE Files

Washington Dept. of Transportation (Elwa Pit, Clallam)	(1990) Complaint investigation. Gravel pit is primarily used for storing sand and gravel, culverts and other construction material and for burning "roadside debris". Observations: improper disposal of oil from application truck and maintenance shop oil/water separator and catch basin; improper disposal of pesticide rinseate from applicator truck; improper storage of chemicals. Sample results indicated petroleum contaminated soils were present in pit but did not confirm pesticide contamination. DOT to undertake remedial action. "Since migration of petroleum contamination through the soil did not occur, site will not be listed on Site Management Information System."
Woodworth and Co. (Tacoma, Pierce)	(1991) Urban Bay Action Team inspection summary: improper storage of unlabeled wastes; "inevitable leakage" around hot mix asphalt plant.

Misc. unconfirmed reports connected with hydrocarbons:

(1990) Oil dumping and burying of used filters and antifreeze by trucking firm in Redmond (connection with gravel mining?)

(1990) Oil leakage from gear boxes and discharge of diesel oil from truck washing at asphalt plant in Silverdale.

(1991) Early notice letter to gravel mining company in Kent advising inclusion in WDOE database of known or suspected contaminants under Model Toxics Control Act. Informal report attached indicates "most significant contamination" was from leaking diesel fuel pumps.

(1991) "Groundwater contamination is likely" from UST excavations with standing water at abandoned aggregate supply site in Lynnwood.

(1991) Evidence of leakage of petroleum hydrocarbons from above ground storage tanks at trucking company in Anacortes. ASTs not bermed.

APPENDIX C

Surface Water Problems Associated with Gravel Mining as Indicated by Material in WDOE Files

Concrete Batch Facilities:

Aggregate Supply (Bellevue, permitted to Lakeside Gravel)	(1973) "Settling ponds appear to be seeping contaminated water into a drainage ditch" which feeds into a wetland adjoining Kelsey Creek. No follow-up?
Associated Sand and Gravel (Everett, King)	Numerous (15) incidents of high pH wastewater and silt discharge to Pigeon Creek in '89-'90 (some samples collected). Spill of 80 gallons of antifreeze from truck maintenance shop to creek in 1989. Penalties assessed for violations of NPDES permit.
BO-MAC Sand and Gravel (Port Orchard, Kitsap)	(1989) cement waste dumped into creek (truck washout pond located adjacent). "General disregard of environmental regulations".
Cadman Concrete (Monroe, Snohomish)	(1991) Concrete batch plant - no State Waste Discharge Permit. High pH discharge (confirmed by lab analysis) from settling ponds to surface waters.
Cadman Gravel Co. (Redmond, King)	(1982) Concrete waste washed from cement truck into creek.
Lakeside Gravel (Bellevue, King)	(1987) Temporary batching operations were generating "significant volume of wastewater" to sump (and then to?). "Likely that the disposal of wastewater is to waters of the state". Lakeside agrees to plug sump and pump and haul all wastewater to Issaquah site and to refrain from truck washing at this plant.
Lonestar Northwest (Tacoma, Pierce)	(1990) Notice of Violation for exceeding pH discharge limit issued by City of Tacoma Sewer Utility Division. "Illegal uncontrolled discharges" to Hylebos Waterway. No State Waste Discharge Permit.
Shope Concrete Products Co. (Puyallup, Pierce)	(1990) High pH waste water and sediment-laden storm water being discharged into storm water drainage system discharging to Puyallup River. Water samples taken; no State Waste Discharge Permit.
Stoneway Concrete (Renton, King)	"Some 16 enforcement actions dating back to 1970" (1986) Backhoe operator struck underground pipeline causing release of 70,000 gallons diesel oil (1,000 gallons directly to Green River) -- \$10,000 penalty assessed. Numerous penalties assessed for discharge of untreated wastewaters.
Stoneway Concrete (Renton, King)	<p>(1978) Dragging of truck-wash sediment from settling basin "inadvertently opened a discharge pipe" allowing high-pH turbid wastewater to enter Cedar River. Trout and salmon mortality in excess of 4,000 estimated. Other species not accounted for. Total damage to Cedar River resource estimated at 11,040.41. Not clear how much of this was actually collected: WDOE mitigated their \$1,500 penalty for discharge to state waters to \$250.00.</p> <p>(1969) Citizen complaint to <u>Seattle Times</u> results in inspection of facilities by Water Pollution Control Board. Violations of water pollution control laws and company's waste discharge permit were noted and deadline for compliance was set (this was apparently ignored). No evidence in file of any penalty for non-compliance.</p> <p>Note: total of 25 recorded "incidents" involving concrete plants found in the Southwest Office files plus the 16 "enforcement actions" referred to in Stoneway's file which remain unexplained.</p>

Surface Water Problems Associated with Gravel Mining as Indicated by Material in WDOE Files	
Gravel Pit/ Sediment Pond Discharges:	
Active Construction (Gig Harbor, Pierce Co.)	(1990) Sediment-laden rainwater runoff from inactive pit discharges to county ditch and then into McCormack Creek. Inspector: "I have not been back or recontacted them because I am waiting for guidance regarding gravel pit issues from my supervisors." Mine operator apparently made attempts to solve the problem by redesigning and regrading of settling ponds.
Anderman Sand and Gravel (Mason Co.)	<p>(1989) WDOE inspection in response to citizen complaints leads to notification of DNR (permitting agency) regarding water quality problems caused by erosion of steep slopes and colloidal nature of resultant turbidity. "The lower settling ponds appear to have reduced holding capacity" – ponds overflow during large storms. Lab analysis report incomplete; no indication of location of high turbidity sample. Where are sample locations recorded?</p> <p>DNR issues Stop Work Order in January, followed by Provisional Surface Mining Permit for resumption of mining on a limited basis due to completion of remedial drainage control measures. "Violations of the state clean water statutes . . . are probably occurring as a result of unusually impermeable strata underlying the mine."</p> <p>Second Stop Work Order issued by DNR in December. Dept. official observed "significant volume" of sediment-laden water overflowing from pond and ultimately into Union River.</p> <p>(1990) WDOE testimony indicates that Anderman does not have and has not applied for a discharge permit and such permit could only be issued if the discharge were brought into compliance with state water quality standards. "To date, the WDOE has not taken formal compliance actions against Anderman" -- has instead coordinated enforcement with DNR. Citizen complaint filed in November '90 suggests that overflow problem has not been solved.</p>
Black River Sand and Gravel (Bellevue, King)	(1989) Turbid water discharge to Jenkins Creek (Class AA). Lab analysis of samples shows 11.4 and 12.9 NTU in creek water. Penalty reduced to \$500.00 due to mitigating circumstances (vandals disconnected power supply to pumps causing water to overflow settling pond dike).
Canyon Sand and Gravel (Tacoma, Pierce)	(1986-89) Complaints refer to silting-up of Canyon Creek due to runoff from undredged sedimentation ponds. "Has been a problem in the past." Inspections but no file record of sampling.
Carl Carlson Gravel (Clark Co.)	(1979) "Silt from the surface mine, caused by poor operating procedures and lack of erosion control, has created mud deltas in Mud Lake." Co. Planning Council questions DNR acceptance of reclamation plan that "does not meet the minimum requirements" of Chapter 78.44.030 RCW. WDOE order in file requires erosion control plan within 30 days, but subsequent correspondence indicates "no effort whatsoever has been taken to comply with the plans the applicant proposed." Clark Regional Planning Council urges WDOE to take enforcement action - no record of any action in file. Correspondence suggests that County will issue stop-work notice which will be in effect until Carlson obtains a grading permit.
Concrete Nor'West (Mt. Vernon, Skagit)	(1974 and 1980) Turbid water from gravel washing operation flowing into Samish River. Penalty of \$500.00 assessed in '81 for violation of State Waste Discharge Permit and Chapter 90.48.080 RCW.

Surface Water Problems Associated with Gravel Mining as Indicated by Material in WDOE Files

Friend and Rickalo (Aberdeen, Gray's Harbor - rock quarry)	<p>(1989) Complaint alleges that retention-pond overflow produces "white foamy material in creek". Inspection unable to confirm, but status of expired NPDES permit and associated discharge monitoring reports uncertain. Poor truck-washing practices noted.</p> <p>(1992) Unannounced inspection. Administrative extension issued on NPDES in 1986: all site runoff must comply with state water quality standards. Vehicle maintenance area "well maintained".</p>
Hamlet Hilpert Gravel (Lewis Co.)	<p>(1986) Adjoining property owners alleged that floodwaters from Skookumchuck River have entered the gravel pit and contaminated the groundwater (causing local wells to become turbid). Mine is located on the floodplain. WDOE inspection reported inundation of "messy" fuel storage area at pit site - tanks had no locking system. Recommendations: geologist review of turbidity issue and construction of bermed/sealed fuel storage area with appropriate sump above 100 yr. flood.</p> <p>(1987 - 88) WDOE ordered pit perimeter be diked to specification to prevent infiltration of floodwaters.</p> <p>(1991) Enforcement order issued in response to WDOE Shorelands Program inspection which disclosed that dike was not constructed as specified - "cannot adequately serve its intended purposes".</p> <p>(1992) Hilpert files Notice of Appeal alleging that operation was in "substantial compliance" with Flood Control Zone Permit as amended and requests WDOE "be put to strict proof as to the allegation that the past or continued operation of the pit constitutes a threat of aggravated flooding". Outcome of appeal?</p>
Lakeridge Gravel - Lakeridge Paving Co.(Pierce Co.)	<p>(1989) County issued cease-work order in response to 2 consecutive days of WQ violations. Wash water retention ponds overflowing. Dredging of ponds and ditches and installation of dry-screening process in progress. No NPDES permit.</p>
Lakeside Gravel (Bellevue, King)	<p>(1973) \$100.00 penalty for discharge of dichloromethane into unnamed creek. Order of Termination of Permit (no date) for surface discharge of waste water in a condition of > 50 NTU.</p>
Lakeside Industries (Issaquah, King)	<p>(1987) \$2000 penalty for discharge of oil to state waters (piping of underground diesel storage tanks ruptured). Failed to notify WDOE as required by 90.48.360 RCW. Lakeside contends: "due to the negligence of Lakeside Gravel Co. in controlling heavy surface water runoff, the road above our tanks washed out allowing water and sand and gravel to wash in and fill the dike. This caused the tanks to float, breaking off the service piping". They blame gravel co. since concrete containment around fuel tanks was adequate to control any on-site spill but could not handle the off-site stormwater runoff coming from the adjacent property.</p>

Surface Water Problems Associated with Gravel Mining as Indicated by Material in WDOE Files

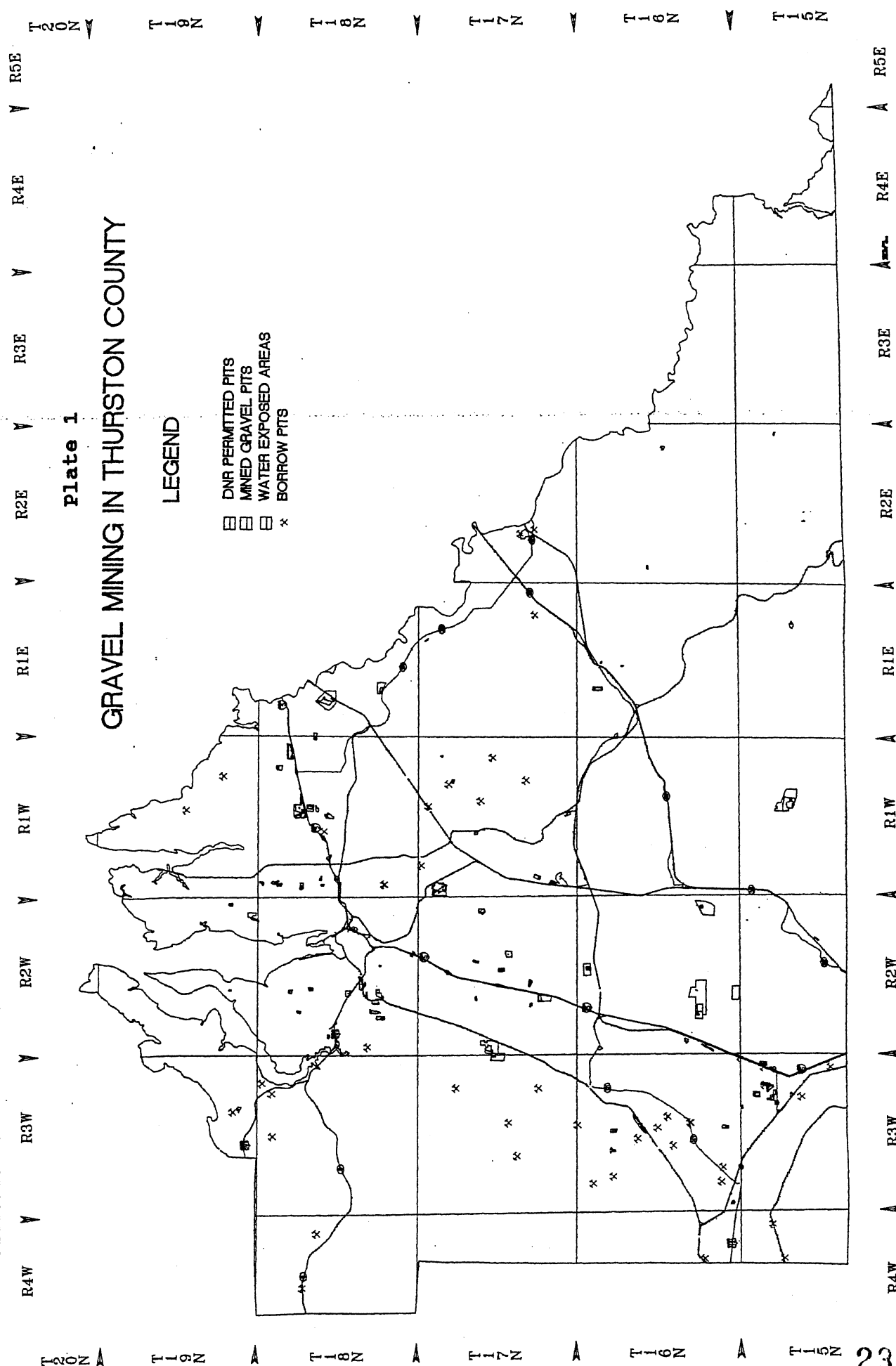
Lakeside Sand and Gravel (Issaquah, King)	<p>(1988) EPA proposed Section 309(g) Administrative Penalty Action in response to allegations that Lakeside "discharged pollutants on 9 separate occasions to North Fork Creek". Pollutants included "soil particles", cement and cement waste and reached the creek via drainage ditch. \$25,000 administrative penalty proposed - no Final Order in file, no water analysis records.</p> <p>(1987) \$1000 penalty for lack of stormwater controls causing "oil and muddy waters to enter Jordan Creek". \$2000 penalty for separate incident involving discharge of cement waste water and turbid runoff to N. Fork Issaquah Creek.</p> <p>(1982) \$4000 penalty for discharge of contaminated wastewater to Jordan Creek (in violation of SWDP and RCW 90.48.080).</p> <p>(1978) \$ 500 penalty for discharge of turbid industrial wastewater to Jordan Creek on 1/18/78. \$2000 penalty for discharge of contaminated stormwater causing turbidity in Jordan Creek on 10/20/78. Inspection report says "samples taken" - results not in file. \$2000 penalty for discharge of industrial process wastewater into Jordan Creek on 10/28/78.</p> <p>(1972) WDOE memorandum outlines apparent violations and possible corrective actions. Inspection of 9/19/72 in response to three complaints of turbid water discharge. "Both sludge lagoons were full of sludge" - treatment methods seem ineffective.</p> <p>(1971) DOE memorandum: Lakeside's temporary waste discharge permit renewal application not acceptable until adequate facilities are installed.</p>
Meridian Aggregate Co. (Mt. Vernon, Skagit)	<p>(1988) \$1000 penalty for wastewater discharge causing siltation of Carpenter Creek.</p>
Olympia Sand and Gravel (Olympia, Thurston)	<p>(1983) Complaint alleges Olympia is polluting Woodland Creek. Field check: operator advised that discharge from lower settling pond is too turbid - "rehab" work on ponds is requested.</p> <p>(1981) Settling ponds are overflowing into Woodland Creek. "When heavy rains occur, groundwater infiltrates ponds causing discharge of silty water because wiers are by-passed. Nothing he (operator) can do about it."</p>
Rainier Rock (Sumner, Pierce)	<p>(1988) Heavy siltation of adjacent creek. "Current slopes in the pit cause almost all surface water to run toward the creek". Transfer of surface mine permit and redesign of siltation ponds proposed to avoid DNR Stop Work Order then in process.</p>

Surface Water Problems Associated with Gravel Mining as Indicated by Material in WDOE Files

Reserve Silica Corp. Ravensdale, King permitted to L-Bar Products)	<p>(1991) Follow-up inspection. "Off-site flow of contaminated storm water has been a source of water quality violations the last two years". Reserve had submitted application for renewal of State Waste Discharge Permit. "Next permit issued should require monthly inspection of berms which direct stormwater flow". Oil, fuel and chemical container handling are very poor.</p> <p>Cement kiln-dust depository areas are capped, and vegetated and groundwater monitoring reports for the underlying aquifer are being submitted to SHW. "Michele Underwood said that no violations of ground water quality have been reported for the site".</p> <p>(1990) Inspection comments: surface area of settling ponds has decreased since last visit; yard and sump area are flooded and runoff is reaching surface waters; oil storage and handling has not been improved (no cover or containment); drainage ditch on property boundary has filled with sediment and needs to be cleaned out (again); no site plan has been submitted per last year's request. WDOE will require NPDES permit?</p>
Salmon Bay Sand & Gravel (Seattle, King)	<p>(1991) Letter from Seattle Engineering Dept. advised that Salmon Bay truck drivers were dumping concrete slush and gravel into storm sewers. Requests company review disposal practices with personnel.</p>
Stoneway Concrete (Renton, King)	<p>(1986) Penalty notice (\$500.00) for release of turbid waters from settling ponds to Cedar River.</p>
Sunset Quarry (Issaquah, King)	<p>(1991) DOE Notice of Violation: Sunset continued to discharge contaminated process wastewater and stormwater runoff into Tibbetts Creek; has been out of compliance with SWDP conditions since 1986. 1986 order to apply for NPDES permit ignored. Condition of 1988 order to cease all discharges has not been met.</p> <p>Notice of King Co. Code Violation: failure to comply with request to correct code violations detailed in (1990) order. Specified work on sediment ponds to be completed within 10 days, long-term erosion, sedimentation, and drainage control plans to be prepared by civil engineer and submitted for review. Plans for restoring disturbed portions of affected creeks to be prepared by stream/wetland ecologist and coordinated with construction/drainage plans. Further correspondence indicates provisions of notice were later partially satisfied with "conceptual drainage plan" prepared without the professional assistance specified. No record of enforcement.</p>
Woodworth and Co. (Pierce Co. - asphalt plant)	<p>(1991) Sediment analysis of catch basin (unlined overflow pond which flows to city storm drain) downhill from plant yields arsenic, copper, lead and zinc ppm measurements below Sediment Quality Objectives established by EPA.</p> <p>UBAT inspection reveals intermittent overflows of washwater from settling ponds, improper storage of potentially hazardous materials (referred to in associated summary of problems related to hydrocarbon spills)</p> <p>(1989) City of Tacoma Planning Dept. requests agency review of Woodworth's methods of handling waste and storm water. "Turbidity problems are occurring in the waterway at the point where the storm water outfall line serving the gravel pit and surrounding area enters the waterway". Health Dept. responds that their staff had monitored the discharge to the storm drain from the Woodworth facility and found that turbidity parameters of WA State WQ standards had been exceeded. NPDES permit should be required for this discharge but has not been obtained.</p>

APPENDIX D

Potential Groundwater Problems Associated With Gravel Mining Solid Waste Disposal Incidents From WOE Files	
Nonpermitted:	
Anderman Sand and Gravel (Mason Co.)	(1989) accepted approx. 200 cu yards of contaminated soil from Belfair Texaco station fuel tank replacement project. Removal ordered by WOE, DNR. (1992) Mason Co. Environmental Health issues Notice of Violation: operating wood waste landfill without a permit. Also in violation of Chapter 70.95 RCW for receiving of waste tires without permit.
Fairview Sand and Gravel (Olympia, Thurston Co.)	(1990) dumping concrete, asphalt and rebar. Possibility that County would amend permit to include use of site for this purpose. (1991) complaints about piles of bark stored near creek
Fife Sand and Gravel (Pierce Co.)	(1991) operated unpermitted Petroleum Contaminated Soil (PCS) treatment facility. Pierce Co. alleged that Fife had then expanded operations beyond restrictions in amended Unclassified Use Permit. NPDES permit to be required.
Lakeside Industries dba Pacific Sand and Gravel (Lacey, Thurston Co.)	Lakeside apparently operated demolition landfill 1971-1988, and for last couple of years was in violation of Solid Waste Regulations adopted in late 1985. Facility ceased operation in 1988 without regard for closure requirements of the new regulations.
Permitted as landfills:	
Dietrich Landfill (Clark Co.)	(1992) materials outside the definition of demolition (foundry ash, sheetrock, yard debris) were dumped at this former gravel mine which was classified as a demolition landfill under Solid Waste Permit.



Appendix 2

Title 2 ADMINISTRATION AND PERSONNEL

Chapter 2.06 HEARING EXAMINER

2.06.050 Examiner's decision.

A. Within ten working days of the conclusion of a hearing, unless a longer period is mutually agreed to by the applicant and the examiner, the examiner shall render a written decision which shall include findings and conclusions based on the record.

B. The decision of the examiner shall be final and conclusive on the fifteenth day after the date of the decision unless a notice of appeal to the board of county commissioners is filed pursuant to Section 2.06.070.

C. The hearing examiner's decision shall be issued not later than one hundred twenty days after a complete permit application is filed, pursuant to Chapter 36.70B.090 RCW, and not later than ninety days after an administrative open record appeal is filed. (Ord. 11398 § 15 (part), 1997: Ord. 6949 (part), 1981: Ord. 6475 § 1 (part), 1979: Ord. 6308 § 1 (part), 1979)

2.06.050

2.06.070 Appeal of examiner's decision.

Title 2 ADMINISTRATION AND PERSONNEL

Chapter 2.06 HEARING EXAMINER

2.06.070 Appeal of examiner's decision.

The final decision by the examiner may be appealed to the board by any aggrieved person or agency directly affected by the examiner's decision, except threshold determinations (TCC Section 17.09.160) and innocent purchaser determinations (TCC Section 18.48.030), in the following manner:

A. The appellant must file a complete written notice of appeal with the development services department upon forms prescribed by the department, and pay the appeal fee within fourteen days of the date of the examiner's final decision; provided, that if the examiner was requested to reconsider the decision, then the appeal must be filed within ten days of the date of the examiner's decision on the reconsideration request.

B. The notice of appeal shall concisely specify the error or issue which the board is asked to consider on appeal, and shall cite in the notice of appeal or accompanying memorandum, by reference to section, paragraph and page, the provisions of law which are alleged to have been violated. Issues which are not so identified need not be considered by the board. Memoranda shall not include the presentation of new evidence and shall be based only upon facts presented to the examiner.

C. The county shall notify parties of record that an appeal has been filed and that copies of the notice of appeal and appellant's memorandum may be obtained from the clerk. The notice to parties shall also state that parties of record wishing to respond to the appeal may submit written memoranda to the board within fourteen days from the date that notice to parties is mailed by the county.

D. The appellant may submit a responsive memoranda within seven days from the date that memoranda from parties of record is due.

E. The timely filing of a notice of appeal shall stay the effective date of the examiner's decision until the appeal is adjudicated by the board of county commissioners or until the appeal is withdrawn.

F. All appeals of hearing examiner decisions are considered to be closed record appeals, following an open record hearing on a project permit application or administrative appeal, when the appeal is on the record with no or limited new evidence or information allowed to be submitted and only appeal argument allowed. (Ord. 13120 § 1, 2004; Ord. 11398 § 15 (part), 1997; Ord. 6949 (part), 1981; Ord. 6475 § 1 (part), 1979)

Title 17 ENVIRONMENT

Chapter 17.20 MINERAL EXTRACTION CODE

17.20.200 Hydrogeological report.

If a hydrogeological report is required by Chapter 17.15, the approval authority may require the report to include any of the following additional elements:

- A. Groundwater elevation of uppermost saturated zone based on at least one year of conservation water level data, including seasonal variations. Other reliable data may be employed upon approval by the health officer;
- B. Locations on existing wells within one thousand feet of the excavation boundary. Well information including well logs, static water level, well depth, well elevation, estimated withdrawal rate and other relevant information shall be included as it may be available;
- C. Description of effects including water quality and water level changes expected to occur in any of these existing wells as a result of mining activity;
- D. Proposed final depth of excavation;
- E. If proposed mining will intercept an aquifer, background water quality for iron (Fe), manganese (Mn), turbidity, nitrate (NO₃ expressed as N), total petroleum hydrocarbons, and water chemistry parameters related to the ability of silts and clays to settle from water shall be determined as part of the report. Additional water quality parameters may be required on recommendation by the health officer if local conditions merit such inclusion. When adequate and reliable water quality background data exists it may be used by approval of the health officer. If background water quality data does not exist, water quality background shall be based on methods acceptable to the Department of Ecology or be based on at least six sampling events of data generally collected once per month. The health officer may accept other methods of determining background parameters if performed according to methods approved by the Environmental Protection Agency or the United States Geological Survey;
- F. An analysis of turbidity and water chemistry as related to the mining proposal. This includes a professional estimate of how far turbidity might be expected to be transported, based on overlying soil type, earth materials lateral to the mining activity, particle composition, pore sizes within the aquifer, the groundwater flow velocity, and the chemistry of the groundwater;
- G. Estimated effects of stormwater and process water. (Ord. 10368 § 3 (part), 1993)

Title 17 ENVIRONMENT

Chapter 17.20 MINERAL EXTRACTION CODE

17.20.210 Groundwater monitoring.

A. For those projects for which a hydrogeological report is required by Chapter 17.15, a water quality monitoring system shall be devised and submitted to the environmental health division for approval, and shall become part of the special use permit conditions. Monitoring wells, surface water sampling points, parameters and schedules for sampling shall be included. Water sampling may include on and off-site locations as required by the health officer. Point of compliance as defined in WAC 173-200-060 shall be based on specifics of the site as determined from review of the hydrogeological report.

B. If mining is conducted in an aquifer, water sampling wells shall be monitored quarterly for water level and water quality. Sampling frequency may only be reduced when two years of base line data have been accumulated. Sampling parameters for exposed aquifers less than one acre in size shall be done semi-annually or as approved by the health officer. (Ord. 10368 § 3 (part), 1993)

17.20.210

Title 17 ENVIRONMENT

Chapter 17.20 MINERAL EXTRACTION CODE

17.20.280 Civil infractions.

A. Violations of the provisions of this chapter are designated as Class I civil infractions pursuant to RCW Chapter 7.80. Each day of any such violation is a separate civil infraction. However, a notice of infraction shall not be issued until the person responsible has been notified of the alleged violation and has been afforded a reasonable period of time to come into compliance. Civil infractions shall be heard and determined according to RCW Chapter 7.80, as amended, and any applicable court rules.

B. The enforcement officer for implementation of this chapter is the director of the Thurston County planning department or designee.

C. An enforcement officer issuing a notice of civil infraction shall require the person receiving the notice to identify himself by producing a valid driver's license or identicard. If the person receiving the notice is unable to produce such a card, the enforcement officer shall require the person to give name, address and date of birth. If the person is unable or unwilling to give such information, the enforcement officer may, with the assistance of a deputy sheriff, detain such person for a period of time not longer than is reasonably necessary to identify the person.

D. The Thurston County planning director is responsible for assuring county compliance with RCW 7.80.150.

E. Notice of civil infractions may be recorded with the Thurston County auditor against the property on which the violation took place in the following instances:

1. The person receiving the notice of civil infraction does not respond as required by RCW 7.80.080;
2. The person receiving the notice of civil infraction fails to appear at a hearing requested under RCW 7.80.080 (3) and (4);
3. The person assessed a monetary penalty for the civil infraction fails to pay such penalty within the time required by law and does not appeal the penalty. If the penalty is appealed, the enforcement officer may record the notice of civil infraction only if a penalty remains unpaid after a final appellate determination has been entered.

F. The auditor shall record any notice of civil infraction submitted for recording under this section.

G. The purpose of this section is remedial. Use of the civil infraction procedure will better protect the public from the harmful effects of violations, will aid enforcement, and will help reimburse the county for the expenses of enforcement. (Ord. 10368 § 3 (part), 1993)

Title 20 ZONING

Chapter 20.30B DESIGNATED MINERAL LANDS

20.30B.010 Purpose.

This chapter establishes the requirements and procedures for a mineral extraction site to receive designation as mineral resource lands of long-term commercial significance. The requirements and procedures are designed to conserve long-term commercially significant mineral lands and to minimize land use conflicts by allowing designation status only where a long-term mining operation would be compatible with surrounding land uses and by providing notification to surrounding property owners of the long-term nature of a designated mining operation. This chapter also provides increased protection to designated mineral extraction operations by limiting nuisance claims from neighboring property owners. Nothing in this chapter shall be construed as prohibiting mineral extraction on nondesignated sites. (Ord. 11398 § 3 (part), 1997; Ord. 10398 § 15 (part), 1993)

Title 20 ZONING

Chapter 20.54 SPECIAL USE*

20.54.015 Approval authority.

1. Administrative Approval. Applications for the following types of special uses shall be reviewed and approved, modified or denied by the development services department:

- a. Home occupations;
- b. Expansions of nonconforming, nonresidential uses by no more than five percent;
- c. Mobile or manufactured home parks (two to four mobile/manufactured homes per lot);
- d. Temporary uses listed in Section 20.54.070(41.5)(b) in zoning districts shown on Table 1;
- e. Attached or co-located WCFs within urban growth areas;
- f. Remote freestanding WCF/antenna support structures that would not extend more than thirty feet above all adjacent trees within one hundred feet of the proposed WCF/antenna support structure location and would be located more than one mile from a residential district and co-located WCFs that do not require an increase in the height of the antenna support structure.
- g. Family day care provider; and
- h. Community club.

2. Hearing Examiner Approval. The approval authority for all other special use permits, including proposed expansions (greater than five percent) to or conversions of nonconforming, nonresidential uses, is the hearing examiner. (See Chapter 20.60.) (Ord. 13235 § 14, 2004; Ord. 13058 § 3, 2003; Ord. 12463 § 17, 2001; Ord. 11867 § 1 (part), 1998; Ord. 11804 § 100, 1998; Ord. 11398 § 3 (part), 1997; Ord. 11025 § 28, 1995; Ord. 8216 § 108 (part), 1985)

Title 20 ZONING

Chapter 20.54 SPECIAL USE*

20.54.040 General standards.

In addition to the specific standards set forth hereinafter with regard to particular special uses, all uses authorized as special uses shall meet the following standards:

1. Plans, Regulations, Laws. The proposed use at the specified location shall comply with the Thurston County Comprehensive Plan and all applicable federal, state, regional, and Thurston County laws or plans.

2. Underlying Zoning District. The proposed use shall comply with the general purposes and intent of the applicable zoning district regulations and subarea plans. Open space, lot, setback and bulk requirements shall be no less than that specified for the zoning district in which the proposed use is located unless specifically provided otherwise in this chapter.

3. Location. No application for a special use shall be approved unless a specific finding is made that the proposed special use is appropriate in the location for which it is proposed. This finding shall be based on the following criteria:

a. Impact. The proposed use shall not result in substantial or undue adverse effects on adjacent property, neighborhood character, natural environment, traffic conditions, parking, public property or facilities, or other matters affecting the public health, safety and welfare. However, if the proposed use is a public facility or utility deemed to be of overriding public benefit, and if measures are taken and conditions imposed to mitigate adverse effects to the extent reasonably possible, the permit may be granted even though the adverse effects may occur.

b. Services. The use will be adequately served by and will not impose an undue burden on any of the improvements, facilities, utilities, or services existing or planned to serve the area.

4. Time Limits.

a. Expiration of Approval. If a building permit has not been issued, or if construction activity or operation has not commenced within three years from the date of final approval, the special use permit shall expire. The special use permit shall also expire when the use or activity for which the permit was granted is vacated for a period of three years.

b. Upon the application of the owner or representative, the approval authority may grant a one year extension. In no case shall the approval authority grant an extension for more than one year at a time. If an extension of time is approved, the special use permit will be subject to all new and amended regulations, requirements, policies or standards which are adopted after the original date of approval.

c. Knowledge of the expiration date and initiation of a request for extension approval time is the responsibility of the applicant. The county is not responsible for providing notification prior to expiration. All requests for an extension of time must be submitted to the department prior to expiration of the special use permit.

d. Time Limit and Re-Review. Where the approval authority is the hearing examiner, there may be a condition to provide time limits for the use. If it is determined after review that the special use no longer meets the conditions set by the hearing examiner at the time of the initial approval, the use may be terminated, or such standards added as will achieve compliance with the original hearing examiner conditions.

5. Signs. In addition to the requirements of Chapter 20.40, the following provisions apply to uses approved by this chapter:

a. For home occupations and home-based industries, there shall be no more than one sign, not to exceed six square feet in area, and except for home occupations, may be attached to the structure housing the special use or may be freestanding. Freestanding signs shall not exceed forty-two inches in height measured from the ground to the top of the sign. Signs shall be unlit and shall use nonflashing, nonreflective materials. Colors shall be nongarish and consistent with residential character.

b. For home occupations, the sign shall be attached to the home or the structure housing the home occupation. Where the building is not visible from the nearest public road serving the property, one freestanding sign complying with the foregoing specifications may also be placed near the road.

c. For other uses consisting of a single business or use on a site in residential zoning district, there shall be no

more than one two-faced sign not to exceed thirty-two square feet per side; or alternatively, two signs attached to the building below the roof line, or placed close to the building, with a combined square footage not to exceed thirty-two square feet.

d. Multi-business sites shall be governed by Chapter 20.40. (Ord. 12463 § 18, 2001; Ord. 11804 § 101, 1998; Ord. 11398 § 3 (part), 1997; Ord. 8216 § 108 (part), 1985)

Title 20 ZONING

Chapter 20.54 SPECIAL USE*

20.54.070 Use--Specific standards.

The following standards apply to specific special uses and are in addition to those established in other sections of this chapter. The zoning districts in which a special use is authorized are identified in Table 1.

1. Academic Schools.

a. Minimum Site Size.

i. For Public Schools. Minimum site size shall be as required by the Superintendent of Public Instruction.

ii. For Private Schools. In addition to complying with the minimum lot size requirements of the zoning district in which located, the minimum lot area of a private school in excess of four students, shall be determined by the approval authority.

The density shall not exceed one hundred students per one acre of ground nor shall there be more than one square foot of floor area to two square feet of ground area.

b. Any portion of the site which abuts upon a residential use shall be screened in such a manner as to reduce the noise generated by activities on the school grounds.

c. The height of any auditorium or gymnasium shall be set by the approval authority.

2. Airfields and Landing Strips. No specific additional standards, except that only military airfields are allowed within the military reservation district.

3. Animal-Bone Black Processing, Fat Rendering, Distillation of Bones. No specific additional standards.

4. Boat Launch. No specific additional standards.

4.5 Camp or Recreation Ground. No specific additional standards.

5. Cemeteries.

a. Access to roads shall be at least two hundred feet from any intersection. A turning lane shall be provided if required by Thurston County roads and transportation services department.

b. A protective fence and landscaped strip of evergreen trees and shrubs at least ten feet in width shall be installed on all common property boundary lines with any residential district.

6. Churches.

a. The height limitations of the pertinent use district need not be observed; however, if the height limitation of such use district is exceeded, then each side yard shall be at least equal in width to the height of the building, spires and towers excluded.

b. Any dwelling located in conjunction with a church shall comply with the provisions governing residential uses of the use district in which it is located.

c. There shall be suitable landscape screening on any church parking lot adjacent to a public right-of-way. A sight-obscuring landscape screen or aesthetically pleasing high solid fence shall be provided between the church parking lot and any abutting residential use.

d. Church-sponsored uses requiring special use approval may be reviewed under the original special use application for the church, or as an amendment to an approved special use.

7. Commercial, Business or Trade School.

a. Site Size. In addition to complying with the minimum lot size requirements of the zoning district in which located, the minimum lot area of any such school with more than four students, shall be determined by the approval authority.

The density shall not exceed one hundred students per one acre of ground nor shall there be more than one square foot of floor area to two square feet of ground area.

b. Setbacks and screening shall be sufficient to protect neighboring uses.

c. If traffic generated by a particular institution would have a detrimental impact on existing and future

residential uses, access onto an arterial street shall be required.

8. Community Club, Homeowners' Association, Private Club or Fraternal Organization.

a. Minimum site area shall be twenty thousand square feet.

b. Landscaping shall be required where necessary to preserve the appearance of the residential character of the neighborhood. There shall be a ten-foot buffer strip with visual screening on all sides abutting residential districts or uses.

c. The building shall be of a design that will be compatible with the residences in the area.

d. Parking shall not be less than the minimum required in Section 20.44.030; however, the approval authority shall determine if additional spaces will be needed to guarantee that all user parking will be on the premises and will be adequate for the use.

9.3 Composting Facilities.

a. Purpose. To allow facilities which import, process, package, and distribute products derived from composting yard wastes, other biosolids, and organic waste;

b. Standards.

1. Minimum lot size--twenty acres,

2. Maximum building site coverage--ten percent,

3. Minimum structural setback--one hundred feet from property line,

4. Direct access to the operation shall be from a collector or arterial road,

5. The entire composting operation must be conducted under a roof,

6. The operation shall be effectively screened from view by using a solid screen six feet high. Screening may include fences, walls, vegetation, berms with vegetation, combinations of these, or other methods, all of which must provide a permanent solid screen barrier to prohibit visibility from rights-of-way and adjacent and nearby properties. Vegetation used for screening must be of sizes, types, numbers, and siting adequate to achieve one hundred percent opacity within three years. All vegetation used for screening shall be maintained in a healthy condition. Vegetation used for screening that dies shall be replaced within six months. Fences and walls over six feet high require a building permit,

7. The operation shall meet all state noise and air quality control standards,

8. The operation shall obtain and maintain a solid waste permit from Thurston County environmental health.

9.5 Country Inn Design Standards.

a. Minimum lot size--ten acres;

b. Minimum structural setback (including parking area)--one hundred feet from property line;

c. Maximum building height--thirty feet (excluding existing structures);

d. When a proposed country inn for an existing structure cannot meet the required setbacks, the hearing examiner may adjust setbacks to residential standards, subject to the applicant demonstrating compatibility with the rural environment;

e. Existing structures are defined as structures existing at the time of adoption of this title;

f. Minimum distance of one country inn from another shall be three air miles but not measured over Eld, Budd or Henderson Inlets. Separation of country inns from a neighborhood convenience use shall be one to three miles based on impact (as defined in Section 20.54.040(3)(a) and (b)). An analysis of such impact shall be made part of the staff report to the hearing examiner;

g. Parking--one space per two table settings, one space per employee (all other requirements for parking area are located in Section 20.44.030);

h. Access. All country inns must take primary access off a county arterial or collector roadway;

i. Hours of operation--nine a.m. to ten p.m. (except for New Year's Eve);

j. Landscaping. Landscaping will be required where necessary to screen, buffer, and enhance residential character of neighborhood. The applicant will be required to provide a landscape plan showing how the above noted requirements will be met;

k. Location. Country inns in the R-1/1 and R-1/2 zones will only be allowed when the country inn property is located within three-fourths miles of state highway right-of-way.

10. Day-Care Centers and Nursery Schools.

a. All such uses shall be located so as to have access adequate to accommodate pedestrian and vehicular traffic to and from the use as determined by the approval authority. To assist in making this determination, each applicant shall provide an estimate of the maximum expected trip generation, the distribution of these trips by mode and time of day.

b. When such a use is located in or adjacent to a residential district, screening in the form of plantings, walls, or fencing shall be provided of such a nature and density as determined by the approval authority.

c. Parking space shall be provided as follows:

i. If the day-care facility also serves as a private residence, a minimum of two off-street parking spaces shall be provided for the residents.

ii. In addition, off-street parking for staff and for pickup and delivery of children shall be provided as follows:

(A) Staff parking shall comply with Chapter 20.44.

(B) Off-street pickup and delivery spaces shall be provided commensurate with the number of children served by the facility so that the neighborhood will not be adversely impacted or children endangered.

11. Drive-In Theaters. No specific additional standards.

11.3 Essential Public Facilities.

a. The applicant shall demonstrate that the proposed use will not have any probable significant adverse impact on critical areas; lands within any long-term agriculture district, long-term forestry district, or Nisqually agricultural district; or designated mineral resource lands, except for lineal facilities, such as highways, where no feasible alternative exists.

b. Major public facilities which generate substantial traffic shall be sited near major transportation corridors.

11.5 Farm Housing (Five or More Units).

a. Applicant shall demonstrate that the number of requested units are needed for the efficient operation of the farm.

b. The farm housing units shall be located in a manner that will not negatively affect the viability of farming on the property.

12. Feedlots. No specific additional standards.

12.2 Forest Management Activities.

a. The maximum cumulative building size for uses other than storage shall be four thousand square feet; and

b. The maximum area permitted for accessory storage uses, whether indoor or outdoor, shall be ten thousand square feet.

12.5 Garages, on Upland Lots and Within the Summit Lake Special Management Area.

a. Meet the setback standards of the underlying zone;

b. Provide buffers of native vegetation (either existing or replanted) of thirty feet along the front property line and twenty feet along the side property line, with this buffer to be located on the upland lot and not within the right-of-way; and

c. Be compatible in design, color, shape, landscaping and size to surrounding upland garages or residences within one-fourth mile.

13. Golf and Athletic Facilities.

a. Facilities built in conjunction with a particular residential development and used only by residents of that development and their guests shall be considered as an accessory use and not as a special use.

b. If the facility is to contain food service facilities or is intended to be used for tournaments, additional parking shall be provided as required.

14. Greenhouses or Nurseries--Retail. No specific additional standards.

14.5 Greenhouses--Wholesale. No specific additional standards.

15. Home-Based Industry.

Purpose. To provide for small-scale commercial or industrial activities on residential parcels, subordinate to the primary residential use, if the approval authority finds that such activities can be conducted without substantial adverse impact on the residential environment in the vicinity. The scale of the proposals to be considered through this mechanism is typically greater than could be accommodated through a home occupation permit, but less than would require an outright rezone to industrial or commercial districts.

a. The following list of uses is not intended to be exhaustive, but rather is intended to be illustrative of the types of uses which the approval authority may consider:

- i. Antique and gift shops;
- ii. Art or photography studios;
- iii. Auto repair;
- iv. Bed-and-breakfast with more than six guests;
- v. Blacksmith shop;
- vi. Construction office;
- vii. Furniture repair or refinishing;
- viii. Pottery shop;
- ix. Real estate sales office;
- x. Small restaurants for ten or fewer patrons;
- xi. Woodworking shop.

b. Standards.

- i. The business must be owned and operated only by full-time residents of the parcel on which the proposed use is being requested.
- ii. The business may not employ more than two persons on the site at any one time who reside off the subject property.
- iii. Only those buildings or areas as specifically approved by the approval authority may be utilized in the conduct of the business.
- iv. Any new building constructed to house the home-based industry shall be limited in scale so that it is in character with neighboring properties. In no case shall more than four thousand square feet of total building area on the property be devoted to the home-based industry.
- v. Any business requiring customers to visit the site shall provide a minimum of three on-site parking spaces in addition to one each for full-time equivalent employees who reside off the subject property and two for the owners of the subject property.
- vi. All activity related to the conduct of the business or industry shall be conducted within an enclosed structure, except that vehicles used in the business may be stored openly as approved on the site plan.
- vii. The approval authority may attach additional conditions or requirements or may make modifications to the site plan where necessary to protect the health, safety and welfare of the public.
- viii. The scale of the proposed use shall be limited in nature.
- ix. The granting of the proposed use shall not, in effect, constitute a rezone.
- x. Direct access must be from a paved road meeting county standards.
- xi. No off-site signage is permitted.
- xii. No business may provide drive-through services.
- xiii. No outside storage of equipment or materials shall be permitted unless screened or fenced so as to not be visible from streets and neighboring properties.
- xiv. No expansions of the approved home-based industry are permitted.

16. Home Occupations.

a. Home occupations are subordinate to the primary residential use and are permitted in any dwelling unit and include, but are not necessarily limited to, the following:

- i. Artists and sculptors;
- ii. Authors and composers;

- iii. Dressmakers, seamstresses and tailors;
- iv. Day-care homes limited to not more than twelve persons;
- v. Home crafts, such as model making, rug weaving, lapidary work, woodworking and ceramics;
- vi. Office facility of a minister, rabbi, priest or other similar person associated with a religious organization;
- vii. Office facility of a salesman, sales representative or manufacturer's representative, architect, artist, broker, dentist, physician, engineer, urban planner, landscape architect, public relations practitioner, instructor in arts and crafts, insurance agent, land surveyor, lawyer, musician, real estate agent or typist;
- viii. Classes of specialized instruction;
- ix. Barbershops and beauty parlors;
- x. Bed-and-breakfast with no more than six guests.
- xi. Kennels housing four to ten dogs with the following standards:
 - (A) Dogs which are let outside unleashed shall be kept in a fenced enclosure.
 - (B) The setback standards in Section 20.07.030 for animals housed inside a structure shall apply.
 - (C) Visual screening, increased setback, increased lot size, and other conditions may be required taking into account safety, noise and odor factors.
 - (D) Kennels within the McAllister geologically sensitive area district shall be subject to a waste management plan approved by the hearing examiner which minimizes the risk of groundwater contamination.
- b. Permitted home occupations do not include the following:
 - i. Funeral chapel or funeral home;
 - ii. Medical or dental clinic or hospital;
 - iii. Riding or boarding stable;
 - iv. Veterinary clinic or hospital.
- c. Home occupations operating under the following circumstances are permitted as a matter of right (that is, they are exempt from an approval process), provided all of the other standards of this chapter are met:
 - i. No employees;
 - ii. No sign;
 - iii. All work is done inside the dwelling, not in any accessory buildings; and
 - iv. No materials or equipment used in the home occupation are stored, altered or repaired outdoors.
- d. In addition to the standards applicable in the zoning district in which located, all home occupations shall be subject to the following standards:
 - i. A home occupation must be conducted within a dwelling which is the bona fide residence of at least one of the persons employed in the occupation or in an accessory building thereto which is normally associated with a residential use.
 - ii. No alteration to the exterior of the buildings as permitted in subsection (16)(d)(i) above shall be made which changes the character and appearance as a residential use.
 - iii. No outside storage of equipment or materials shall be permitted unless screened or fenced so as to not be visible from streets and neighboring properties. Up to four cords of wood may be stored outdoors in the case of persons engaged in a home occupation of selling firewood.
 - iv. No more than two persons at any one time other than a member of the immediate family occupying such dwelling shall be employed.
 - v. No special use may generate noise at the property line in excess of twenty continuous minutes for the maximum total of one hour per day if the noise is so loud as to be annoying.
 - vi. If the occupation is the type in which classes are held or instruction given, there shall be no more than four students allowed in any one class or instruction period.
 - vii. Only those buildings or areas as specifically approved by the approval authority may be utilized in the conduct of the business.
 - viii. Any new construction to house the home occupation shall be limited in scale so that it is in character with neighboring properties. In no case shall more than one thousand square feet of total building area on the

property be devoted to the home occupation.

ix. All activity related to the conduct of the business shall be conducted within an enclosed structure except that vehicles used in the business may be stored openly as approved on the site plan.

x. The approval authority may attach additional conditions or requirements or may make modifications to the site plan where necessary to protect the health, safety and welfare of the public.

xi. Direct access must be from a paved road meeting county standards.

xii. No off-site signage is permitted.

xiii. No expansions of approved home occupations are permitted.

17. Hospitals.

a. Minimum lot size shall be five acres;

b. Minimum front yard of fifty feet, measured from property line;

c. Minimum side or rear yard of fifty feet, measured from property line;

d. Maximum height shall be as determined by the approval authority;

e. Maximum lot coverage shall be fifty percent.

17.5 Jails.

a. General Requirements. Adequate sewage disposal facilities and water must be provided without diminishing the level of service for system users or others dependent upon the resource.

b. Location.

i. Jail sites shall not be located closer than five hundred feet from the boundary of a district in which the use is not allowed as a special use.

ii. Jail sites shall be located at least one mile from any school and any site for which a special use application for a school has been submitted.

iii. Jails shall be located such that law enforcement officers can respond to a call for assistance within five minutes under typical conditions.

iv. Advance life support service, as defined in RCW 18.73.030(19), must be available within five minutes under typical conditions.

v. The hearing examiner may lessen standards in subsections (17.5)(b)(i) and (ii) above if, in his or her opinion, a water body, freeway, or other barrier provides separation as effective as these standards.

c. Security. The applicant shall submit a proposed security plan which, at a minimum, is consistent with applicable American Corrections Association security standards. This plan shall identify staffing levels and scheduling, building security, an escape search plan, and provisions for immediate public notification of escapes.

d. Design.

i. Size. Jails with a capacity for two hundred inmates shall be located on a site of at least fifteen acres. Jail sites shall contain an additional four acres for each additional fifty bed increase in capacity above this threshold.

ii. Landscaping/Buffers.

(A) The applicant shall submit a binding landscaping plan which serves to maintain or enhance the character of the area without jeopardizing security. This plan shall incorporate at least a twenty-five-foot landscaped buffer along public rights-of-way.

(B) The applicant shall install an eight-foot high fence in character with the neighborhood between the facilities and all property boundaries, with the exception of the landscaped street frontage, which effectively screens the site from adjacent properties. The hearing examiner may waive or lessen this requirement if he/she determines that, due to existing site features or the type or character of adjoining uses, the privacy and security of the occupants of adjoining properties can be maintained in the absence of a fence or with a lower fence.

(C) Barbed wire topped fencing shall not be visible from public rights-of-way.

(D) Outdoor activity areas located in residential districts shall not be visible from public rights-of-way or adjacent properties.

iii. Noise. The hearing examiner may require conditions to minimize potential noise impacts including, but not limited to, altering the location of outdoor use areas and noise generating facilities, and installation of noise

reducing elements such as walls, berms, and landscaping.

iv. Lighting. Site lighting shall not produce levels of illumination or glare that would pose a nuisance or hazard for motorists on public rights-of-way or constitute a nuisance for occupants of adjacent properties.

v. Access. Jails shall have direct access to an arterial or collector unless the hearing examiner determines that access via a lesser classification of street would not be detrimental to neighborhood character and would not increase public safety risks.

18. Junk Yards--Wrecking Yards.

a. Fencing. All operations shall be entirely enclosed by a solid fence or wall, at least eight feet high constructed of plank boards, brick, cinder blocks, concrete, or a totally sight-obscuring natural screen, with access only through solid gates. Such fence or wall shall be kept in good repair and neatly painted in a uniform color and in harmony with the surrounding neighborhood.

b. The contents of junk or automobile wrecking yards shall not be placed or deposited to a greater height of the fence or wall prescribed in this section.

c. Provision shall be made for control and treatment of runoff.

d. Junk yards and wrecking yards shall obtain and maintain a solid waste permit from Thurston County environmental health.

18.5 Juvenile Detention Facilities.

a. General Requirements. Adequate sewage disposal facilities and water must be provided without diminishing the level of service for system users or others dependent upon the resource.

b. Location.

i. Rural Areas.

(A) Sites accommodating juvenile detention facilities shall not be located closer than one thousand feet from the boundary of a district in which the use is not allowed as a special use.

(B) Sites accommodating people convicted of violent crimes shall be located at least one-half mile from residential districts with an allowable density of one unit per two acres or greater.

(C) Sites accommodating juvenile detention facilities shall be located at least one mile from any school and any site for which a special use application for a school has been submitted.

(D) Juvenile detention facilities shall be located such that outside law enforcement officers can respond to a call for assistance within five minutes under typical conditions.

(E) Advance life support service, as defined in RCW 18.73.030(19), must be available within five minutes under typical conditions.

(F) The hearing examiner may lessen standards in subsections (18.5)(b)(i)(A), (B) and (C) of this section if, in his or her opinion, a water body, freeway, or other barrier provides separation as effective as these standards.

ii. Urban Growth Areas.

(A) Buildings accommodating juvenile detention facilities shall not be located closer than two hundred feet from the boundary of a district in which the use is not allowed as a special use.

(B) Juvenile facilities shall be located such that outside law enforcement officers can respond to a call for assistance within five minutes under typical conditions.

(C) Advance life support service, as defined in RCW 18.73.030(19), must be available with five minutes under typical conditions.

c. Security.

i. For county juvenile detention facilities, the applicant shall submit a security plan, reviewed by the sheriff, which, at a minimum is in compliance with applicable American Corrections Association's security standards for juvenile detention facilities. This plan shall identify staffing levels and scheduling, building security, an escape search plan, and provisions for immediate public notification of escapes.

ii. For state juvenile correctional facilities, the applicant will annually advise the sheriff of the current staffing levels and scheduling. The current escape search plan and provisions for immediate public notification of escapes will also be provided. The facility will be operated in compliance with Juvenile Rehabilitation Administration standards and applicable state and local regulations.

d. Design.

i. Size. Juvenile detention facilities with capacity for up to seventy-five inmates shall be located on a site of at least five acres. Sites shall contain an additional four acres for each additional fifty bed increase in capacity above this threshold.

ii. Setbacks. The facility shall be set back at least seventy-five feet from public rights-of-way and property lines.

iii. Landscaping/Buffers.

(A) The applicant shall submit a binding landscaping plan which serves to maintain or enhance the character of the area without jeopardizing security. This plan shall incorporate a landscaped buffer along public rights-of-way. The type and size of the required landscape buffer shall reflect the security needs of the facility and mitigate aesthetic and other impacts on surrounding properties.

(B) The applicant shall install an eight-foot high fence in character with the neighborhood between the facilities and all property boundaries, with the exception of the landscaped street frontage, which effectively screens the site from adjacent properties. The hearing examiner may waive or lessen this requirement if he/she determines that, due to existing site features or the type or character of adjoining uses, the privacy and security of the occupants of adjoining properties can be maintained in the absence of a fence or with a lower fence. An existing fence that exceeds the eight-foot requirement may remain when a modification to an existing juvenile facility is proposed.

(C) Barbed wire topped fencing shall not be visible from public rights-of-way or adjacent properties, unless such fencing existed prior to the effective date of this title.

(D) Outdoor activity areas located in residential districts shall not be visible from public rights-of-way or adjacent properties.

iv. Noise. The hearing examiner may require conditions to minimize potential noise impacts including, but not limited to, altering the location of outdoor use areas and noise generating facilities, and installation of noise reducing elements such as walls, berms, and landscaping.

v. Lighting. Site lighting shall not produce levels of illumination or glare that would pose a nuisance or hazard for motorists on public rights-of-way or constitute a nuisance for occupants of adjacent properties.

vi. Access. Juvenile detention facilities shall have direct access to an arterial or collector unless the hearing examiner determines that access via a lesser classification of street would not be detrimental to neighborhood character and would not increase public safety risks.

19. Kennels Housing Eleven or More Dogs.

a. If dogs are kept or let outside unleashed, they shall be kept in a fenced enclosure.

b. The setback standards in Section 20.07.030 for animals housed inside a structure shall apply.

c. Visual screening, increased setback, increased lot size and other conditions may be required by the approval authority taking into account safety, noise and odor factors.

d. Kennels within the McAllister geologically sensitive area district shall be subject to a waste management plan approved by the hearing examiner which minimizes the risk of groundwater contamination.

20. Major Energy Transmission and Generating Facilities.

a. These facilities are generally of a regional scope and include such uses as:

i. Electrical generating facilities exceeding ten megawatts in capacity;

ii. Electrical transmission lines exceeding one hundred fifteen thousand volts;

iii. Pipelines for (A) petroleum or petroleum products with inside diameter of six inches or over, exceeding fifteen miles in length; and (B) natural gas, synthetic natural gas or liquid propane gas with inside diameter of fourteen inches or over, exceeding fifteen miles in length;

iv. Refineries with capacity exceeding twenty-five thousand barrels per day;

v. Liquid natural gas ports exceeding one hundred by one hundred six standard cubic feet per day;

vi. Petroleum and liquid propane gas ports exceeding fifty by one hundred three barrels per day;

vii. Underground gas storage facilities with capabilities exceeding one hundred by one hundred six standard cubic feet per day;

viii. Other energy facilities as provided under definitions (Chapter 20.03).

b. The need for the particular location proposed shall be demonstrated by the applicant to the satisfaction of the approval authority, including a full accounting of alternative locations and sites.

c. The physical and economic impacts of such facilities will be evaluated, and measures to mitigate these impacts provided.

21. Mineral Extraction. Mineral extraction (including expansions of existing conforming and legal nonconforming mines) and accessory uses are subject to the following provisions and the provisions of Chapter 17.20 of this code, the Thurston County Mineral Extraction Code:

a. Accessory Uses.

i. The following accessory uses are allowed only when expressly permitted in a special use permit issued by the approval authority: washing, sorting or crushing of rock or gravel, asphalt production (batching or drum mixing), concrete batching, storage or use of fuel, oil or other hazardous materials, and equipment maintenance. Limited manufacturing of concrete products from sand and gravel excavated on-site may be allowed by the department as an accessory use to a permitted concrete batching facility; provided, that retail sales of such products are prohibited. All other accessory uses are allowed only when approved after administrative review by the development services and the roads and transportation services departments.

ii. Accessory units are permitted only in conjunction with an existing mineral extraction operation. Recycling of asphalt or concrete is permitted as an accessory use only in conjunction with a permitted crusher and in accordance with any health department requirements. Temporary asphalt and concrete production may be permitted only to fulfill a contract for one specific public project and for a period not to exceed twelve months or the length of the contract, whichever is shorter. There must be at least twelve months between the end of one temporary use period and the beginning of another on the same site.

b. Reports. Copies of any reports or records, except financial reports, required to be submitted to federal, state, regional or county officials or agencies pursuant to any laws or regulations shall be made available to the county upon request. Information required shall be limited to that pertaining to operations within Thurston County. The public disclosure of such information shall be governed by applicable law. The operator shall keep a record of the source of any asphalt, concrete or soils imported from off-site and stored on-site.

c. Application and Review Procedures. In addition to the information required in Chapter 20.60, the application to the county for a special use permit for mineral extraction shall include:

i. A contour map, drawn to the scale of one hundred feet to the inch and contour intervals of two feet, or at a scale and topographic interval determined to be adequate by the development services department, showing current field topography, including the location of water courses of the tract intended for the proposed operation and estimated thickness of overburden and mineral-bearing strata in the tract intended for the proposed operation;

ii. The rehabilitation and conservation plans described in Section 17.20.140 of this code;

iii. A list of all proposed activities anticipated or planned to occur on the site, including but not limited to the method of mineral extraction, washing, sorting, crushing, asphalt or concrete batching, equipment maintenance, or any activity that could result in a potential, significant, adverse environmental impact;

iv. A preliminary drainage plan in accordance with Chapter 15.05 of this code;

v. A copy of the applicant's DNR reclamation permit application, as required by RCW 78.44.080.

d. Bonds. In cases where rehabilitation requirements of the county exceed those of the Department of Natural Resources, a performance bond may be required in an amount to be sufficient to insure rehabilitation in accordance with the plan submitted pursuant to Section 17.20.140 of this code, subject to applicable law. With the approval of the county and for such period or periods as may be specified, the owner may be permitted to post its own bond without corporate surety.

e. Permit Review. Any permit issued pursuant to this chapter shall be reviewed by the approval authority no less frequently than every five years from the date of the decision to approve the permit. The approval authority shall determine the frequency of permit review. The director may authorize a reasonable fee for this review. At the time of such review, the approval authority may impose additional conditions upon the operation if the approval authority determines it is necessary to do so to meet the standards of this chapter, as amended.

f. Designated Mineral Lands Status. In accordance with Chapter 20.30B, an application for designation as mineral resource lands of long-term commercial significance may accompany an application for a special use permit for mineral extraction. Refer to Chapter 20.30B for requirements.

21.3 Mobile or Manufactured Home Parks (two--four Mobile/Manufactured Homes Per Lot). The provisions of Chapter 20.31 shall apply.

21.6 Mobile or Manufactured Home Parks (five or More Mobile/Manufactured Homes). The provisions of Chapter 20.31 shall apply.

20.60.050 Violations, civil infractions and penalties.

Title 20 ZONING

Chapter 20.60 ADMINISTRATION, FEES, VIOLATIONS AND PENALTIES

20.60.050 Violations, civil infractions and penalties.

1. Any person, whether owner, lessee, principal, agent, employee or otherwise, who violates any of the provisions of this title, or permits any such violation, or fails to comply with any of the requirements hereof, or who erects any building or uses any building or uses any land in violation of any detailed statement or plan submitted by him and approved under the provisions of this title shall be guilty of a misdemeanor and, upon conviction thereof, shall be subject to punishment as provided by law.

2. Any violations of Section 20.34.020(8)(b)(iii)--(iv), 20.34.020(8)(c)(iii)--(iv), 20.34.020(8)(d)(iii) and 20.34.020(10) shall be designated as a Class 1 civil infraction. The violation of any other provision of Title 20 shall be designated as a Class 2 civil infraction. Each day of any such violation is a separate civil infraction; a notice of infraction may be issued for each day of any such violation, however the enforcement officer is not required to issue a notice of infraction for each day of such violation. Civil infractions shall be heard and determined according to Chapter 7.80 RCW and Section 20.60.055.

The civil infraction procedures adopted in this section and by Section 20.60.055 provide an additional method of civil enforcement to procedures found in subsections 1, 3 and 4 of Section 20.60.050. The initiation of proceedings under subsections 1, 3 and 4 does not preclude the initiation of a civil infraction proceeding under Section 20.60.055.

No permit or approval shall be granted pursuant to this title if there exists on the subject property any land use violation known by the approval authority unless expressly authorized by this section. For purposes of this section, a land use violation is any violation of the Thurston County Critical Areas Ordinance (Chapter 17.15 of the Thurston County Code), Thurston County Forest Land Conversion Ordinance (Chapter 17.25 of the Thurston County Code), Thurston County Zoning Ordinances (Titles 20, 21, 22 and 23 of the Thurston County Code), Thurston County Platting and Subdivision Ordinance (Title 18 of the Thurston County Code), Sanitary Code for Thurston County, Shoreline Master Program for the Thurston Region or Title 14 of the Thurston County Code (Buildings and Construction).

A permit or approval may be granted if conditioned on having the violation remedied within a reasonable time as provided by the approval authority. If a permit or approval is conditioned on remedial action, security in the form of a letter of credit or similar instrument shall be required unless waived by the approval authority for good cause. This section shall not apply to requests for a permit or approval to remedy a violation.

3. Any building erected or improvements constructed contrary to any of the provisions of this title and any use of any building or land which is conducted, operated or maintained contrary to any of the provisions of this title or permits issued pursuant thereto shall be and is declared to be unlawful. The prosecuting attorney is authorized to bring actions by any appropriate means to prevent the violation of this title and to enforce its provisions.

4. The development services director may, in writing, suspend or revoke a permit or approval required by this title whenever the permit is issued in error or on the basis of incorrect information, or in violation of any ordinance or regulation or any provision of this title, or when a use or building is being maintained in a manner contrary to the terms of the permit or approval. (Ord. 12761 § 26, 2002; Ord. 11398 § 3 (part), 1997; Ord. 6708 § 3 (part), 1980)

20.60.050

Appendix 3

**MITIGATED
DETERMINATION OF NONSIGNIFICANCE**

**ATTACHMENT
h**

Proponent:

Quality Rock Products
Randy DeAtley
16424 Old Highway 99 SE
Tenino, WA 98589

Representative:

Subterra, Inc
8112 - 304th Avenue SE, Suite B
Preston, WA. 98050

Description of Proposal:

Special Use Permit to expand excavation of an existing gravel mine both vertically and horizontally, and for construction of a hot-mix asphalt plant on 151 acres within the Quality Rock Gravel Mine on the west end of 88th Avenue, East of the Black River. Excavation will increase from the existing 26 acres to the rest of the entire onsite deposit as shown on the site plan. As part of the mining plan the floor of the existing operation will be lowered approximately 60 feet, or about 40 feet below the regional ground water table, creating a 75 acre lake as part of the final reclamation plan. In addition to the expanded mining operation, the proposal includes resuming concrete and asphalt recycling, crushing, along with replacing the previous concrete batch plant and installing an asphalt hot mixing plant. The life of the project is approximately 20 years to extract approximately 14 million tons of aggregate. The property lies within the Rural Residential One Dwelling Unit per Five Acres zone classification (RR1/5) and has been designated Mineral Resource Lands. A Special Use Permit is required for this proposal.

Location of Proposal:

4741 - 88th Avenue SW, Olympia, WA 98512

Section/Township/Range:

S18/T17N/R2W

Tax Parcel Number:

12718310000

Threshold Determination:

Thurston County Development Services has determined that it does not have a probable significant adverse impact upon the environment. An Environmental Impact Statement is not required under RCW 43.21C.030(2)(C). This decision was made after review of a completed Environmental Checklist and other information on file with by Thurston County Development Services. This information is available to the public on request.

Conditions/Mitigating Measures:

See page 2

Jurisdiction:

Thurston County

Lead Agency:

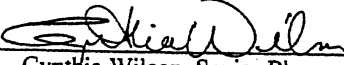
Development Services

Responsible Official:

Cynthia Wilson, Environmental Review Officer

Date of Issue: October 4, 2001, 2000

Comment Deadline: October 18, 2001


Cynthia Wilson, Senior Planner

This Determination of Nonsignificance (DNS) is issued under 197-11-340(2); the lead agency will not act on this proposal for 15 days from the date of issue. No permits may be issued, and the applicant shall not begin work until after the comment and any appeal periods have expired and any other necessary permits are issued. If conditions are added, deleted, or modified during the 15-day review period, a modified DNS will be issued. Otherwise, this DNS will become final after the expiration of the comment deadline and appeal period, if applicable.

APPEALS: Threshold determinations may be appealed pursuant to TCC 1709.160 if: (1) a written notice of appeal, meeting the requirements of TCC 17.09.160(4), and the appropriate appeal fee is received by the Thurston County Development Services Department within fourteen calendar days of the date of issuance of the threshold determination or, if there is a comment period under WAC 197-11-340, within seven calendar days of the last day of the comment period; and (2) the person filing the appeal meets the requirements of TCC 17.09.160(2).

NOTE: The issuance of this Determination of Nonsignificance does not constitute project approval. The applicant must comply with all applicable requirements of Thurston County Departments and/or the Hearing Examiner prior to receiving permits.

Thurston County Development Services, Linda Whitcher
Building #1, Administration
2000 Lakeridge Drive SW
Olympia, WA 98502
(360) 754-3355 ext. 7662

cc: Department of Ecology (2)
Adjacent Property Owners
Dave Hurn
Mark Goodin, OAPCA

Sub-Area # 6
Thurston Co Roads & Transportation
Nancy Pritchett
Carol Serder, DNR

ATTACHMENT

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Debbie Carnevali, WDF&W
Environmental Health, John Ward, Bob Mead

Kelly McCallister, WDF&W
Steve Johnson

ATTACHMENT
CASE NUMBERS:
SEPA-00-0788 & SUPT-00-0788

Background

This mitigated determination of non-significance is issued after review and consideration of the mitigating measures contained in these documents:

- Environmental Checklist
- Special Use Permit application
- Noise Analysis
- Report on the Soils, Geology and Groundwater
- Hydrogeologic Report
- Drainage and Stormwater Control Plan
- Transportation Impact Analysis
- Air Quality Analysis
- Reclamation Plan Coordination
- Wildlife Study
- Wetland delineation, Categorization and Enhancement Plan

Conditions

The conditions listed below are intended to avoid or mitigate the potential objectionable effects of traffic congestion, noise, glare, odor, air and water pollution, and fire or safety hazards.

Traffic

1. The applicant must fully in compliance with the Transportation Impact Analysis, dated July 13, 2000 by Transportation, Inc and conditions required by Thurston County Development Review Section.
2. As noted in the OAPCA air quality permit, the unpaved portions of 88th Avenue and the access road shall be paved to minimize dust, debris and loose material.

Noise

3. The applicant must fully implement the mitigation measures included in the Noise Analysis, dated July 11, 2000 and prepared by Bruck Richards Chaudiere, Inc. Construction and operational mitigating measures identified in the Noise Analysis must be implemented, including, but not limited to the following:
 - a. Limiting hours of operation for crushing to 7am to 10pm.
 - b. Maintenance of acoustical berms along the outside areas of the plant to minimize noise impacts to adjacent residents. As stockpiled materials are removed from the wetland buffer area and the area restored, the berm shall be reestablished outside the buffer.
4. The applicant shall develop fully and implement a noise monitoring plan reviewed and approved by Thurston County Environmental Health Department. This report shall include baseline information and a regular schedule for monitoring and submittal of reports. The applicant shall demonstrate that they are fully in compliance with all state and local noise ordinances.
5. The applicant is proposing night time production under specific circumstances. If night time production is approved, the asphalt plant operator must ensure that the night time noise levels meet the standards in WAC 173-60 and are monitored by a technician with the qualifications contained in WAC 173-58 (or other qualifications as determined by the Health Officer) using instruments that meet the qualifications of WAC 173-58. Noise levels must be measured at the property boundaries prior to and during nighttime operations to establish compliance with the regulations. The monitoring reports must be provided to Development Services and the Environmental Health Department.
6. If the night time noise standards cannot be met, further mitigation measures will be required to meet the applicable standards or night time operations shall be discontinued. These mitigation measures may include, but are not limited to, increasing the height of the existing berms, providing material stockpiles around the plant operation, applying additional noise reduction measures to the plant operation or moving the plant further away from adjacent property lines.

Lighting

7. Any lighting on the site must be directed away from adjoining properties and must be shielded to prevent any flare from being directed onto adjoining properties.

Odor

8. Coalescing filter control on the asphalt cement tank vents is required to control the blue smoke and odors.

Spill prevention

9. The practices and procedures for stormwater treatment, spill prevention, mitigation, and treatment shall be detailed in a Spill Prevention Control and Countermeasures Plan and a Storm Water Pollution Prevention Plan, submitted

to, and approved by Thurston County Environmental Health Department. The plans must be reviewed and updated upon plant startup and annually thereafter.

10. To minimize the potential for groundwater contamination the rock processing facilities, concrete batch and asphalt mixing plant shall be separated from the gravel extraction areas by a low soil berm around the process area. Both the asphalt and concrete plants will be permanently fixed atop curbed concrete pads to control stormwater runoff and contain possible spillage. All containment areas shall be sized 1.5 times greater than any volume of material stored within the perimeter. All stormwater shall be collected and treated prior to infiltration.

Drainage and Stormwater

11. The proposed development must comply with all requirements and best management practices for the treatment of stormwater including but not limited to high quality oil/water separators, grass-lined swales, extended detention dry ponds, wet ponds or created wetlands in compliance with the Drainage Design and Erosion Control Manual for the Thurston Region, as implemented by the Thurston County Development Review division.
12. Erosion must be controlled throughout the construction period. Should soil migration occur, approved methods of erosion control must be implemented. These methods may include, but are not limited to, replanting exposed soils, and covering of exposed soils with plastic or two inches of loose straw.

Aquifer protection

13. The applicant must fully implement the Hydrogeological Report and design criteria for the concrete and asphalt activities on-site. This plan requires that the applicant implement measures to keep the infiltrated stormwater free of contaminants using the following measures:
 - a. Above-ground fuel and petroleum/asphalt product tanks on impermeable pads with secondary confinement.
 - b. Traffic control within the site to reduce the risk of accidents and spills
 - c. Grass lined bioswales to filter stormwater run-off
 - d. Berms or lined ditches surrounding the infiltration pond to prevent spills from directly entering the infiltration pond or the unpaved gravel portions of the pit in the vicinity of the infiltration pond
 - e. Impermeable pads for equipment maintenance and washing, including collection and treatment facilities for wash water.
 - f. Use of source control and operational best management practices as described in the Department of Ecology Storm Water Management Manual for the Puget Sound Basin, for fueling stations, vehicle washing stations, liquid material loading/unloading systems, and liquid material storage.
14. The applicant must fully develop and implement a Ground Water Monitoring Plan which has been reviewed and approved by Thurston County Environmental Health Department. This plan requires that the applicant implement a ground water sampling plan including installation of Groundwater Monitoring Wells.
15. Ground water must be sampled and tested for contaminants including total petroleum hydrocarbons in the diesel to heavy oil range, pH, turbidity, Total Dissolved Solids, Iron, manganese and water levels. Ground water sample locations must include two new monitoring wells downgradient from the proposed pit.
16. One round of water quality and water level monitoring must occur prior to the start of site operations to evaluate background conditions. After the start of operations, water quality and water level monitoring must occur quarterly for the first two years. After the first two years monitoring will become semi-annual, twice a year in approximately September and March. If there is evidence of ground water impacts, a new monitoring schedule will be developed in cooperation with the Thurston County Health Department.

Air quality

17. The applicant must fully implement the Air Quality Analysis and the criteria in the Applicants Letter of May 4, 2001. The project must be in full compliance with OAPCA requirements including the following mitigation measures built into the proposal to reduce emissions:
 - a. Using water spray to minimize dust; all driveways, roadways and driving surfaces would be washed down as needed
 - b. Paving gravel portions of 88th Ave and access area, the access gate has been relocated to minimize vehicle idling adjacent to residences.
 - c. Burning natural gas instead of oil as a dryer fuel, using diesel only as a backup if propane or natural gas supplies are disrupted.
 - d. Installing drop box and baghouse to collect particulate matter from the flue gas
 - e. Limiting operation to 10 hours per day and 500,000 tons of asphalt per year
 - f. Developing an air quality monitoring plan approved by OAPCA and Thurston County Environmental Health Department. This shall include gathering of baseline information as well as a regular monitoring schedule with submittal of reports to Thurston County and the Agencies listed below.

ATTACHMENT

SEPA000788

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18. Three agencies have air quality jurisdiction in the project area: the United States Environmental Protection Agency (EPA), the Washington State Department of Ecology (DOE) and the Olympic Air Pollution Control Authority (OAPCA). All operations on site must meet the standards and requirements of each agency.
19. The asphalt plant must be a modern state of the art plant that operates within the parameters of all current best management practices, state, county and federal standards and regulations for noise, odor and air quality. The plant may be a "used" model but must be considered state of the art in that it fulfills all objectives of controlling noise, protecting air quality is energy efficient and environmentally safe.

Fire Safety

20. Petroleum products are permitted on-site if they are stored in tanks or enclosures approved by the Thurston County Fire Marshal.

Utilities

21. All utilities must be extended to the site in accordance with the provisions and requirements of the service providers.

Wetlands and Streams

22. The applicant shall be in full compliance with Thurston County's Critical Areas Ordinance 17.15 for protection of the adjacent stream and associated buffer located along the eastern portion of the property. This wetland requires retention of a 200 foot native vegetation buffer. This buffer has been impacted in the past with stockpiled material. The applicant shall comply fully with implementation of the wetland buffer enhancement plan prepared by Ecological Land Services and dated October 20, 2000. A wetland biologist shall be retained to oversee the implementation of the plan and provide monitoring reports as required below. As the stockpiled material is removed, the area shall be revegetated as required in the enhancement plan.
23. An estimate of the cost of the enhancement plan and monitoring shall be submitted to the County. Prior to Final Approval, a Letter of Credit for 120% of the value of the enhancement, including materials, implementation, and a minimum of 6 years of monitoring, shall be submitted. A monitoring report shall be submitted annually detailing the actions taken to date, the success of the mitigation and any future contingency activities. Based on the monitoring reports and the success of the mitigation and completion of the Enhancement Plan, the Letter of Credit may be released or may be extended accordingly until successful mitigation is complete.
24. The edge of the 200 foot buffer associated with the stream and wetlands on the eastern portion of the site, shall be accurately identified and marked by a professional wetland biologist. A permanent fence shall be established at the edge of the 200 foot buffer in those areas not disturbed or as the stockpiled material is moved and the buffer reclaimed via the enhancement plan.
25. The Black River Wetlands occur just off-site to the northwest. A minimum 300 foot buffer shall be maintained from the edge of the wetland to protect fish and wildlife habitat, groundwater, and minimize intrusion into the wetland area. Prior to any additional expansion on the site, the outside edge of the wetland buffer shall be accurately measured and marked by a professional wetland biologist. A permanent fence or low berm shall be established outside the buffer to eliminate any intrusion.

General Coordination

26. Prior to installation of the asphalt plant on the site, the applicant must certify to the Director of Development Services that the plant meets or exceeds all noise, odor, and air quality standards in effect at the time of installation. In addition the applicant must certify to the Director of Development Services that all required permits have been acquired including but not limited to:
- Special Use Permit
 - Building permit
 - Grading permit
 - Encroachment permits
 - Stormwater runoff and erosion control permit
 - Fuel storage tank installation approval
 - Fuel and hazardous material plan
 - National Pollution Discharge Elimination System (NPDES permit)
 - Spill Prevention Control and Countermeasures Plan
 - New source Notice of Construction
 - Groundwater Monitoring Plan
 - Noise Monitoring Plan
 - Air quality Monitoring Plan

Appendix 4

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**Hydrogeologic Analysis
For Littlerock (Fairview) Aggregate Mine
Thurston County Washington**

Prepared for:
**Quality Rock Products
Tenino, WA**

Prepared by:
**Pacific Groundwater Group
1627 Linwood Ave SW
Tumwater, WA 98512**

and
**SubTerra, Inc.
218 East North Bend Way
North Bend, Washington 98045**

October 2002

Project JE0209

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- 4 Field-Measured Groundwater Quality Parameters in Monitoring Wells at Littlerock (Fairview) Mine.

List of Attachments

- A Drilling Logs for On-Site Monitoring Wells and Test Pits
- B Stream Discharge Measurements

Hydrogeologic Analysis for Littlerock (Fairview) Aggregate Mine Thurston County, Washington

Introduction

This report is prepared to support reconsideration of a special use permit for expansion of gravel mining activities at the Littlerock (formerly Fairview) aggregate mine operated by Quality Rock Products. The project site is located in Thurston County, Washington, at the west end of 88th Ave SW, approximately 1 mile west of Littlerock Road and 2 miles west of Interstate-5, in Township 18N, R2W, section 18, southwest quarter (**Figure 1**).

This hydrogeologic report:

- characterizes the geology, groundwater, and surface water at the mine site, and
- identifies potential impacts of mining on existing wells, wetlands, streams, and groundwater quality

This report addresses the elements of the hydrogeologic report as described in section 17.20.200 of the Thurston County Mineral Extraction Code (Ordinance 10368).

Pacific Groundwater Group worked closely with SubTerra, Inc. on the geologic exploration and characterization. Pacific Groundwater Group's work consisted of:

- compiling prior records of geologic and hydrologic characterization of the site
- installing four exploration borings that were completed as monitoring wells,
- excavating three back-hoe pits to examine the upper 18 feet of geologic materials
- measuring water levels in wells and surface water bodies
- measuring stream flows at two locations
- conducting an aquifer test
- developing a groundwater-flow model of part of the Ashley (a.k.a., Fish Trap) Creek groundwater basin
- assessing effects of aggregate extraction on groundwater and surface water, including Ashley Creek, the Black River, and associated wetlands
- preparing this report

This report supplements a reconnaissance hydrogeology report by SubTerra (2000) that describes the mine design, describes hydrogeologic conditions based on previously available information, and provides illustrations of subsurface geologic cross sections.

Randy DeAtley of Quality Rock Products authorized our work in August 2002. The work was performed, and this report prepared, in conformance with generally accepted hydrogeologic practices in this area, at this time, for exclusive application to the project site, and for the exclusive use of Quality Rock Products. This is in lieu of other warranties, express or implied.

Signature

This report and Pacific Groundwater Group's work contributing to this report were reviewed by the undersigned:

Charles T. Ellingson

Principal Hydrogeologist

Washington State Licensed Hydrogeologist No. 631

Linton L. Wildrick for Charles T. Ellingson

Linton L. Wildrick

Associate Hydrogeologist

Washington State Licensed Hydrogeologist No. 321

Linton L. Wildrick

Project Description

The Littlerock aggregate pit is located in southern Thurston County, approximately 3 miles southwest of Tumwater. The mine is located about one mile west of Littlerock Road SW, with the mine entrance located at the west end of 88th Avenue SW. The project site is currently mined under an existing permit. The site contains two buildings and an aggregate wash plant served by a well for water supply. The wash plant recycles all its water through a series of settling ponds and a return flow line.

Mining will extend to about 40 feet below the regional water table, leaving a 75-acre lake at completion of reclamation. At the end of the mining operation, the property will be reclaimed to forestland and wildlife habitat.

Regional Geology

The discussion of the regional geologic and groundwater conditions to follow is based on investigations by Pringle (1990), Mead (1995), and Drost and others (1998).

The site lies in the southern part of Thurston County, where both Tertiary bedrock and Pleistocene glacial deposits occur at the surface. North of the site lies the Puget Sound Lowland, which is underlain by unconsolidated glacial deposits of the Pleistocene Epoch. A few miles south of the site is a dissected upland of Tertiary rocks (bedrock) and the southern extent of glaciation.

The Puget Sound Lowland was formed by multiple glaciations and structural subsidence that occurred over the last few million years. During the last 1.5 million years, the Puget Sound Lowland was repeatedly glaciated by a lobe of the Cordilleran Ice Sheet which advanced southward from the coastal mountains of British Columbia (Lea, 1984). The youngest of these, which receded about 15,000 years ago, was the Vashon Stage of the Fraser Glaciation. During this period an ice sheet up to 1,400 feet thick covered Thurston County. However, thickness of the ice sheet in the vicinity of the property was less because the site lies near the southern extent of the glaciation. The Penultimate glaciation refers to the glaciation that preceded the Vashon glaciation and which is also represented by glacial sediments in the area. During the Penultimate glaciation, the Puget Lobe extended nearly to Centralia.

Hydrogeology

The sequence of geologic units at the mine site was described in the report by SubTerra (2000). The geologic units on the cross-sections are described using commonly accepted nomenclature for glacial events in the area, as used by the U. S. Geological Survey (USGS). Test drilling of four monitoring wells and three backhoe pits supplemented the prior information. The thickness of glacial sediments beneath the site exceeds 95 feet (deepest on-site well) and may be up to 300 feet, based on the regional interpretation by Drost and others (1998). The following paragraphs describe the various hydrogeologic units.

Vashon Drift

The uppermost geologic layers beneath the project site and its vicinity are collectively called the Vashon Drift. From youngest to oldest, Vashon Drift includes recessional outwash (Qvr), found off-site to the east, till (Qvt), and advance outwash (Qva) from the Vashon Stade glaciation, as well as the soils derived from these deposits. These geologic units were discussed in the report by SubTerra (2000), but also are discussed herein as necessary to emphasize their hydraulic properties. In this area, the hydrogeologic units are the same as the geologic units.

Soils Derived from Vashon Drift

Soil data for this study were taken from Pringle (1990) and are shown in the report by SubTerra (2000). The soils within the mine property and nearby are associated with the underlying glacial deposits. The soils indicate that the surficial rocks of the Littlerock mine site consist primarily of till and advance outwash.

Well-drained, gravelly soil with "rapid permeability" is characteristic where advance outwash (Qva) occurs at the surface. The Everett series soils have formed on this deposit.

Poorly drained soil with "slow permeability" is characteristic of weathered glacial till in wetland areas. *McKenna gravelly silt loam* and *Alderwood gravelly sand loam* have formed on this deposit in the wetland areas on the eastern margin of the mine along Ashley Creek and associated wetlands. The underlying weakly cemented glacial till crushes to useful aggregate, after washing, but when undisturbed has relatively low permeability. The grain-size distribution for a sample of this till was analyzed in Quality Rock Products' laboratory and found to contain 49% silt and clay (amount passing through a 200-mesh sieve). The presence of till at ground surface near Ashley Creek was confirmed in three shallow test pits (TP1, TP2, TP3; see **Figure 1** and **Appendix 1**). Till also caps the upland areas of the mine.

Vashon Till (Qvt) Unit

At the surface in parts of the mine is a layer of dense, silty, gravelly sand, called the Vashon till (Qvt). Till is sometimes called "hardpan" or "glacial concrete" because of its density. It likely was deposited everywhere beneath the glacier, but later was eroded locally by rivers of meltwater as the glacier retreated, creating discontinuities or

“windows” in the deposit. Windows occur in the till on and near the mine site, as indicated by the soil map (Pringle, 1990). Regional studies have found that this fine-grained, low permeability geologic unit behaves hydraulically as an aquitard, which means that it can be expected to retard infiltration through the creek bed and to retard groundwater circulation to or from the underlying materials.

Vashon Advance Outwash (Qva) Unit

Vashon advance outwash (Qva) commonly occurs beneath the Vashon till, but also occurs at the surface where the till has been eroded away. These sediments are slightly silty sandy gravel (or slightly silty gravelly sand) with scattered cobbles and rare boulders. The silt coats the gravel and cobbles but does not fill the interstices among the particles as in the till. The Vashon advance deposits are often laterally extensive and commonly form an important aquifer with moderate to high permeability. This unit is the primary source of aggregate for the mine.

Advance Outwash Aquifer Test

An aquifer test in the water table aquifer (Qva) at the mine site was conducted by Pacific Groundwater Group from August 9 through August 12. Well PW1 is screened in the Qva aquifer and reported to be about 40 feet deep, though no driller's log is available. The well was pumped for approximately 48 hours at a nearly constant-rate.

Well PW1 was pumped at an approximately constant rate of 35 gallons per minute (gpm) for approximately 48 hours, while water levels were monitored in wells LR2, LR3, LR4, and LR5 (locations shown in **Figure 1**). Water levels were monitored for another 36 hours after the pumping ceased. Drawdown response was observed only in well LR2. Analysis was conducted by the method of Moench for unconfined aquifers. The data and fitted analytical model curve are shown in **Figure 3**. The analysis indicated transmissivity of approximately 3,300 ft²/day. Based on an aquifer thickness of 42 feet (interpolated from Drost and others, 1998), the hydraulic conductivity was estimated to equal approximately 80 ft/day. These values were used in the groundwater model, discussed below.

Hydrology

Precipitation and Groundwater Recharge

Precipitation on the mine site is estimated to be similar to precipitation at Olympia, which averaged about 51 inches per year during 1951 through 1980 (Drost and others, 1998). Seventy-nine percent of the precipitation at Olympia falls during the 6-month period from October to March. Of the precipitation, about half, or approximately 25 inches per year, percolates to the water table and recharges groundwater in the mine area. This estimate was derived from the deep percolation (recharge) model of Drost and others (1998), and PGG's application of the rainfall/runoff model HSPF (Bicknell and others, 1997),

described below. Most of the remainder of the rainfall evaporates or is transpired by plants. Runoff is relatively small as a result of the typically gentle precipitation rate and of the high infiltration capacity of the original forest duff and top soils at the mine site (Washington Dept. of Ecology, 2001).

Groundwater Levels and Circulation

Groundwater elevations (heads) were calculated from depth-to-water measurements during August 2002 and measuring point elevations surveyed to the NGVD29 datum. Within the mine property, depth to the water table during August 2002 ranged from about 21 feet below ground surface in the northeast portion of the site, to about 73 feet in the western portion. A seasonal water-table fluctuation of a few feet has been documented in the adjacent Salmon Creek basin (URS and PGG, 2001). Groundwater in the Qva aquifer is unconfined in the mine area, although it is confined beneath till to the east.

Sand and gravel layers in the Qva below the water table transmit groundwater in the direction of decreasing head. **Figure 1** shows head contours that were interpreted from the on-site measurements, as they are expected to fit into contours of regional head that were estimated for Thurston County's Salmon Creek Drainage project (URS and PGG, 2001). The direction of groundwater flow is perpendicular to the contours from higher to lower head. The groundwater pattern is similar to that interpreted by SubTerra (2001). The data generally indicate flow to the west, following the general topography.

Streams and Wetlands

The Littlerock mine lies within the Upper Chehalis River Basin. Groundwater at the mine site flows toward the Black River, which is a tributary to the Chehalis River. The area immediately east of the mine vicinity is drained by Ashley Creek, a small stream that runs under the railroad grade on the eastern boundary of the mine, then turns northwestward, runs along the north side of the mine, passes under the high voltage power line on the northwest corner, and finally turns southwestern toward the Black River (**Figure 1¹**).

There is some disagreement over the name of Ashley Creek. According to Kevin Dragon (personal communication, 2002), Thurston County Stormwater Program, the original Ashley Creek flowed southwestward from 88th Avenue, parallel to Littlerock Road, through a band of wetlands to the Black River floodplain near the mouth of Salmon Creek, the adjacent drainage to the east and south. Following European settlement during the latter half of the nineteenth century, Ashley Creek was diverted westward away from the wetlands, probably to drain some seasonal wetlands to allow for farming. Thurston County staff refer to the present-day creek as Fishtrap Creek, based on the presence of a fish rearing facility on the farm lying immediately upstream of the railroad grade. For this report, we will use the neighborhood's convention of referring to it as Ashley Creek.

¹ The initial letters in stream and well site labels represent the following: SC = Salmon Creek, designated by Thurston County during Salmon Creek study; AC = Ashley Creek, P = piezometer, MW = monitoring well, PW = production well.

Wetlands are located along much of the Ashley Creek riparian corridor. These formed on top of the low-permeability glacial till (Qvt). A large wetland complex associated with the Black River lies just west of the mine and along the Black River floodplain. These wetlands formed on recent alluvium along lower Ashley Creek and the Black River.

The discharge of Ashley Creek was gaged continuously at the culvert under the railroad grade (station SC-14) by Thurston County for about one year (Larson and Associates, 2001). The gaging was part of the Salmon Creek drainage study by Thurston County. These data are graphed in **Figure 2**. The maximum measured discharge was about 19 cfs and the lowest about 1.5 cfs.

PGG measured the discharge in Ashley Creek during August 2002 at station SC-14, and also at station AC1, located about 1,880 feet downstream from the railroad at the entry road to the mine (**Figure 1**). A single discharge and several creek stage elevations² were measured at stations SC-14 and AC1 in August 2002 (**Table 1 and Appendix 2**). In addition, the creek stage was measured at site AC2, located 830 feet downstream from AC1 at a culvert under the access road for the power transmission lines.

The discharge measurements indicate that Ashley Creek was losing approximately 0.4 cfs during August 2002, as it flows along the northeastern boundary of the mine, between stream gaging stations SC-14 and AC1, a distance of about 1,880 feet. This indicates that the water level in Ashley Creek is higher than the groundwater level and may be perched above the regional water table.

Groundwater – Surface Water Relationships

Creek stages at the gaging sites were calculated from staff gage and culvert measurements during August 2002 and measuring point elevations surveyed to the NGVD29 datum. Based on comparison of the groundwater heads (**Figure 1**) with creek stages, the water table lies eight or more feet below Ashley Creek, along the margin of the mine property between gaging stations SC-14 and AC2. A subsurface hydrogeologic cross-section (**Figure 4**) shows the interpreted relationships among the creek, the hydrogeologic units, and the water table. The section is drawn as a straight line but is meant to portray conditions along the arcuate path of the creek.

In comparison to the surface water in Ashley Creek, the underlying groundwater in the Qva aquifer lies considerably lower in elevation. This fits with the measured loss of discharge in the creek, which can happen only when the groundwater level is lower than the creek level. Also, the relative water elevations indicate that none of the mine property drains to Ashley creek, except within the narrow band of associated wetlands along the creek that lie within the mine buffer area.

Based on nearby test drilling and backhoe pits (**Attachment A**), the bed of Ashley Creek consists of a few inches of recent bedload sediment overlying till. Regional studies have found that this fine-grained, low permeability geologic unit behaves hydraulically as an

² National Geodetic Vertical Datum 1929

aquitard, which means that it can be expected to retard infiltration through the creek bed and to retard subsurface percolation to the water table.

Taken together, the three lines of evidence -- relative water elevations, measured leakage losses from the creek, and the hydrogeologic behavior of the till -- indicate that no saturated connection exists between Ashley Creek and the Qva aquifer. Instead, the creek is perched on fine-grained sediments, with an unsaturated zone between the base of the till and the regional water table.

Due to the perched condition, the water table is decoupled hydraulically from the stream, and so the leakage rate through the creek bed is proportional only to the water depth above the creek bed. So long as the water table lies below the base of the till, its level will not affect the creek leakage. In other words, the leakage rate from Ashley Creek will not change in response to changes in aquifer water levels, either increases or decreases, including those predicted as a result of pit-lake creation in the following section. Therefore, the proposed pit lake will not affect the flow in Ashley Creek. This interpretation is in agreement with the interpretations by SubTerra (2000) and Mead (2002).

Potential Effects of Gravel Mining on Groundwater Quantity

This section addresses several of the potential effects of aggregate mining on groundwater quantity that were discussed in Mead (1995). The relevant potential effects for the Littlerock Mine are:

- Changes to evapotranspiration at the pit lake site,
- Changes to water table elevation from creation of additional storage in the pit lake compared to geologic materials,
- Changes to water table elevation around pit lake,
- Changes to groundwater flow and discharge patterns to Black River valley in the vicinity of the pit lake.

Changes in Evapotranspiration for Pit Lake Area

Water can return to the atmosphere as a result of evaporation from free water surfaces and by transpiration from plants, collectively called evapotranspiration (ET). If evapotranspiration increases, groundwater recharge may be similarly reduced.

We have assumed that the mine property was originally forested, as were adjacent developed areas prior to home building and farming. Presently, trees in the active part of the mine have been removed. However, after mining is completed, the site will be reclaimed by spreading and compacting the stockpiled topsoil and by re-vegetation, as required in the mine reclamation plan. The resulting topsoil will be hydraulically similar to pre-mining parts of the site where advance outwash occurred at the surface and was underlain by till. The post-mining condition of the land probably will result in slightly

increased groundwater recharge, due to the stripping of the till that presently retards percolation to the Qva aquifer. Conversely, creation of the pit lake probably will result in an evaporation rate that slightly exceeds the pre-mining ET rate.

These potential changes resulting from the till stripping and pit lake creation were modeled with a precipitation-runoff computer simulation model, called HSPF (Hydrologic Simulation Program FORTRAN; by Bicknell and others, 1997). The model integrates precipitation and pan evaporation rate data with data for vegetation, slope, and soil type to model surficial hydrologic processes of ET, surface runoff, and infiltration (assumed to be groundwater recharge), among other capabilities. For the purposes of this analysis, the HSPF model was used first to estimate evapotranspiration (ET) rates and surface runoff on an average annual basis for the proposed pit lake area under the original forested conditions. Then, the future maximum ET rate for the pit lake area was estimated from pan evaporation data, as described below.

Sources of model input data included the National Weather Service's hourly precipitation record from the Olympia Airport site and daily pan evaporation record from the Puyallup Agricultural Extension Service's site for the period October 1955 through September 1999. The model simulations were then run using the HSPF parameter data set developed by Thurston County for the Salmon Creek basin (URS and PGG, 2001). For all pre-mining simulations, the vegetation type was assumed to be forest, and the slope was assumed to be gentle to flat. For geology/soil type, the simulations assumed that the land where the lake will be located was originally one-half outwash (Qva) and one-half till, as indicated by the U. S. Dept. of Agriculture's (USDA) soil map (Pringle, 1990). The pan evaporation rate was calculated using the USDA's daily pan evaporation record and pan evaporation coefficients of 0.7 and 0.8 (Dunne and Leopold, 1978).

The estimated change in recharge was then calculated as the difference between evaporation under the future lake condition and the sum of ET and surface runoff under the current condition. The resulting estimates of change in recharge are presented in **Table 2**.

The difference between historical evapotranspiration and evaporation from the proposed lakes is a hydrologic effect of the gravel mining. Using the evapotranspiration and evaporation values cited above, we estimate that average annual evaporation from the gravel pit lakes will exceed the historical evapotranspiration by about 3.7 inches per year. Over the 75 acres of proposed lake surface, this increase equals 0.032 cfs (equivalent to 23.2 ac-ft/yr or 14.5 gpm). This rate is relatively small compared to the entire water budget and is approximately equivalent to 3 or 4 garden sprinklers discharging continuously.

Temporary Changes to Water Levels as a Result of Increasing Storage in the Pit Lake

The proposed pit lake, having no inlet or outlet, may be thought of as an extension of the unconfined aquifer. In the lake, the water storage per unit volume (storativity) will increase from about 20 percent to 100%, as each unit volume of aggregate is mined and a

lake is progressively created. This increase will cause a temporary lowering of the water table, when mining occurs below the water table. As buckets of sand and gravel are scooped from the lake, groundwater will move into the lake to replace the removed volume of sand and gravel. While mining is in progress, the rate of extraction is estimated to be equivalent to continuously pumping 138 gpm (0.31 cfs) from the lake, based on an estimated maximum mining rate of 750,000 tons (470,000 cubic yards) per year and a porosity of 0.2. Temporary drawdown of water level within the aquifer 2,000 feet away from the pit will be less than 0.1 foot, as a result of this effect and the downgradient discharge will decrease at 138 gpm (0.31 cfs). The flow in Ashley Creek, in the reach along the mine, will not be disturbed because it is perched above the water table and not affected by water table fluctuations. No water is lost from the system by this lake storage effect, so all the groundwater that flows into the lake eventually will flow to the Black River valley.

Permanent Changes to Groundwater Levels Due to the Presence of the Pit Lake

The excavation of aggregate and creation of a lake will cause a slight lowering of groundwater level upgradient of the lake, and a slight increase in groundwater level downgradient of the lakes (Mead, 1995). The effect on water levels is proportional to the ambient hydraulic gradient (i.e., effect greater for steeper gradient). Effects on groundwater discharges are sensitive to ambient hydraulic gradient, hydraulic conductivity, and location. A GFLOW model of the mine site and vicinity was used to assess the distribution of lake and evaporation effects for the proposed Littlerock aggregate mining project and is discussed below.

Analytical Modeling Estimates of Hydrologic and Hydraulic Changes Due to Mine Expansion

The groundwater flow system in the advance outwash (Qva) aquifer was modeled to evaluate the effect of the proposed Littlerock Mine expansion on groundwater levels in nearby domestic wells and on groundwater discharge to the Black River valley. GFLOW2000, a groundwater flow modeling program, was used for this analysis.

GFLOW2000 is a single aquifer Dupuit-Forchheimer model based on the analytic element method. The groundwater flow system was modeled using a constant head boundaries (oriented north-south) of 126 feet along the Black River and 175 feet to the east of the gravel pit, extending from DNR Well 9 on the south to about Tumwater MW-94-11 on the north (see **Figure 1** for well locations). This upgradient constant-head is consistent with regional groundwater level data as interpreted by Drost and others (1998) and URS and PGG (2001). Model input for aquifer parameters is listed below:

Hydraulic Conductivity:	80 ft/day
Porosity:	20%
Aquifer Base Elevation:	90 feet, msl
Aquifer Thickness:	42 feet

Modeling Estimates of Head Changes

Modeling results for the current conditions (prior to mining below the water table) used the heads and aquifer parameters discussed above. Modeling results for the water table elevation (head) within the model's domain for current conditions are shown in **Figure 5**. The model provided estimates of the lake effect but was not a strict representation of all parts of the groundwater flow system.

The water level contours estimated by the model for current conditions, shown in **Figure 5**, underestimate the hydraulic gradient indicated by on-site wells. The gradient across the site is approximately 0.008 to 0.010 (8 to 10 ft/1000 ft), based on contoured field data (**Figure 1**). However, the analytic element model used the regional gradient of approximately 0.005 (**Figure 5**), based on the results of earlier studies (URS and PGG, 2001 and Drost and others, 1998). The regional gradient is thought to be more representative of conditions east and northeast of the mine where domestic wells are located. Since the model is based on regional data and a nearly uniform flow field, local deviations from the regional conditions across the mine are not represented.

The proposed gravel pit lake was modeled as an inhomogeneity of very high hydraulic conductivity and reduced recharge (Anderson and others, 2001). The high hydraulic conductivity represents the ease of water movement through the lake, and the reduced recharge represents the increased evaporation from the lake surface relative to current conditions. The lake pit boundary is the inhomogeneity boundary, and the conductivity within the inhomogeneity was represented as 300,000 ft/day. The change in recharge from current conditions is -3.73 inches/year, based on results of the HSPF model. The modeling estimates of post-mining groundwater level and water level drawdown are shown in **Figure 5**.

The Thurston County Mineral Extraction Code section 17.20.200 requires identification of wells located within 1000 feet of the excavation boundary. This was accomplished by SubTerra (2002), whose report includes well logs for the field-verified wells. **Figure 5** indicates the locations of the closest wells. Homes along 88th Ave SW and Littlerock Road are supplied by groundwater from the Qva aquifer (**Figure 1**). Modeled change in water level at the nearby water supply wells is in all cases less than 1.7 feet (**Table 3** and **Figure 5**). This change is substantially less than the seasonal fluctuations observed in nearby Thurston County monitoring wells LRS-006, located on 88th St. near the headwaters of Ashley Creek, and LRS-008, located on the north side of 93rd Ave, about 0.5 miles east of Little Rock Road. The pattern of drawdown around the pit lake, indicated by the modeling results is not sensitive to changes in aquifer properties or other inputs; however, the magnitude of water level changes may be as much as twice that shown in **Figure 5** and **Table 3**, as a result of the increase in hydraulic gradient across the mine, as compared to the average gradient used for modeling. Nonetheless, these modeling results are appropriate for planning and permitting purposes, and indicate that the functioning of the local domestic water supply wells will not be materially impaired, because they have sufficient available drawdown (height of water above screen or open lower end of casing).

Estimated Changes in Groundwater Discharge to the Black River Valley

The reduction in groundwater recharge due to the presence of the pit lake also will affect the Black River's flow, because the groundwater beneath the mine eventually discharges to the Black River. However, the effect will be relatively small as demonstrated in the following discussion. The effect was estimated using the Darcy Equation for the rate of horizontal groundwater flow through a section of an aquifer, which is

$$Q = K \cdot I \cdot A,$$

where Q is flow rate, K is hydraulic conductivity, I is hydraulic gradient, and A is cross-sectional area of the aquifer perpendicular to the flow direction.

For input to the equation, the following parameters were assumed:

- hydraulic conductivity of 80 ft/d
- aquifer thickness of 42 feet
- aquifer width beneath the widest part of the pit lake of 1,870 feet
- hydraulic gradient ranging from 0.005 to 0.009.

The calculations indicate that groundwater discharge through the Qva aquifer toward the Black River beneath the location of the proposed pit lake is in the range of 0.36 to 0.65 cfs, for the range of assumed hydraulic gradients. Therefore, the estimated reduction in groundwater recharge at the pit lake of 0.032 cfs would be approximately 5 to 9% of the current groundwater flow beneath the mine. This change is equivalent to the withdrawal of a few domestic wells. In comparison to the water budget of the Black River valley, however, the change is extremely small. For comparison, the flow in the Black River at Littlerock (128th Avenue Bridge) ranges from seven to more than 400 cfs, based on gaging by Thurston County from November 1991 to April 1998.

Potential Effects of Mining on Groundwater Quality

Ambient Groundwater Quality

The regional groundwater quality in the Qva aquifer is very good and meets drinking water quality standards (Chapter 246-290 WAC). In general, the Qva aquifer's groundwater quality is of the calcium-magnesium/bicarbonate-nitrate or bicarbonate type and ranges from about 100 to 250 milligrams per liter total dissolved solids (Drost and others, 1998). Dissolved oxygen concentrations are relatively high, so mobilization of ferrous iron by reducing conditions does not appear likely.

Water samples were analyzed from two wells on the site during 1992 (Skillings and Chamberlin, 1992) for pH, tannin plus lignin, and water temperature. The wells were sampled again in 1994 by Thurston County (Libby, J., 1994) for tannin, specific conductivity, nitrate, pH, turbidity, and water temperature. Two of the older monitoring wells, P3 and P4, could not be located during the current project. The other two wells installed by Skillings, P1 and P2, were located but were dry during August 2002. Lastly, Thurston County sampled three on-site wells – LR2, LR5, and PW1 – on August 22, 2002. Results of laboratory analyses of these samples further demonstrated the high quality of the groundwater at the site (Libby, J., 2002). Diesel hydrocarbons, volatile organic compounds, and semi-volatile organic compounds were not detected. Among the heavy metals, only a small amount of barium (0.0054 and 0.0069 mg/l) was detected in the monitoring wells, and a small amount of lead (0.0168 mg/l) was found in the domestic well. These low values were well below maximum contaminant limits and barely above the detection limit. Locations of the sampled wells are shown in **Figure 1** and water quality results are listed in **Table 4**. Locations of the older wells P1 and P2 were not surveyed and so should be considered approximate to within a couple hundred feet.

Estimated Changes to Water Temperature Due to the Pit Lake

Creation of a pit lake at the Littlerock mine will not cause an increase in average annual groundwater temperature; however, seasonal fluctuations in water temperature in the lake will increase relative to current groundwater temperatures. Winter surface water temperatures will be colder than current groundwater conditions, and summer surface water temperatures will be warmer, at least in shallow portions of the lakes. These conditions are found in all groundwater-filled lakes (no surface inlet or outlet) in the area and are not unique to pit lakes. Such "kettle" lakes occur within a few miles of the mine along the Deschutes River (examples are Barnes, Ward, Hewitt, and Southwick Lakes) and were created when buried blocks of glacial ice melted, leaving a land surface depression.

Any temperature differences caused by a kettle or pit lake must survive transit through the downgradient aquifer in order to have an effect on downgradient surface water (Black River and associated wetlands). Geologic materials have a high heat capacity ("thermal

inertia" – Mead, 1995). Under natural conditions, the temperature of the aquifer or aquitard material tends to equilibrate with the mean annual groundwater temperature, which is in the low 50's Fahrenheit (10-12⁰ Centigrade, see **Table 4**) in this area due to cooler weather during the recharge season. This rock can absorb lots of heat from warmer groundwater over a short distance of flow, depending on the rate of flow. Therefore, it is likely that groundwater warming in the pit lake will not cause much change in the rock temperature and will be dampened to near average groundwater temperature within a few days after entering the ground. The relatively small difference in western Washington seasonal temperatures, and physical mixing of waters from the lakes with other waters, also tend to reduce the downgradient extent of thermal effects.

Mead (1995) cites expectations that temperature effects would be limited to areas several hundred feet downgradient of lakes. The proposed pit lake will be located more than 500-feet from the nearest downgradient wetland. Based on these factors, changes to water temperature at the river and wetlands are not expected to be significant.

Estimated Changes to Groundwater Turbidity Due to Wet Mining

Two processes will cause local increases in water turbidity. Both processes are contained by natural and man-made factors and off-site increases in water turbidity are highly unlikely.

Currently, the mined aggregate is washed to remove remaining fines. Water exiting the wash plant is turbid and so is routed to a series of settling ponds positioned above the water table. The ponds are lined with accumulated silt and leak slowly, and have not caused turbidity effects to the on-site water supply and monitoring wells.

Similarly, dredging the aggregate from below the water table (wet mining) will cause water within the pit to become turbid with suspended silt and clay particles. However, a low hydraulic conductivity layer will accumulate quickly on the lakebed as the silt and clay settles out (Mead, 1995). Water infiltrating the lakebed to the downgradient aquifer will carry a small fraction of the suspended material present in the lake. Filtering and further settling occurs in the aquifer pores. These factors and the relatively large distance to the lower reach of Ashley Creek and the Black River, indicate that the turbidity will not reach these surface waters.

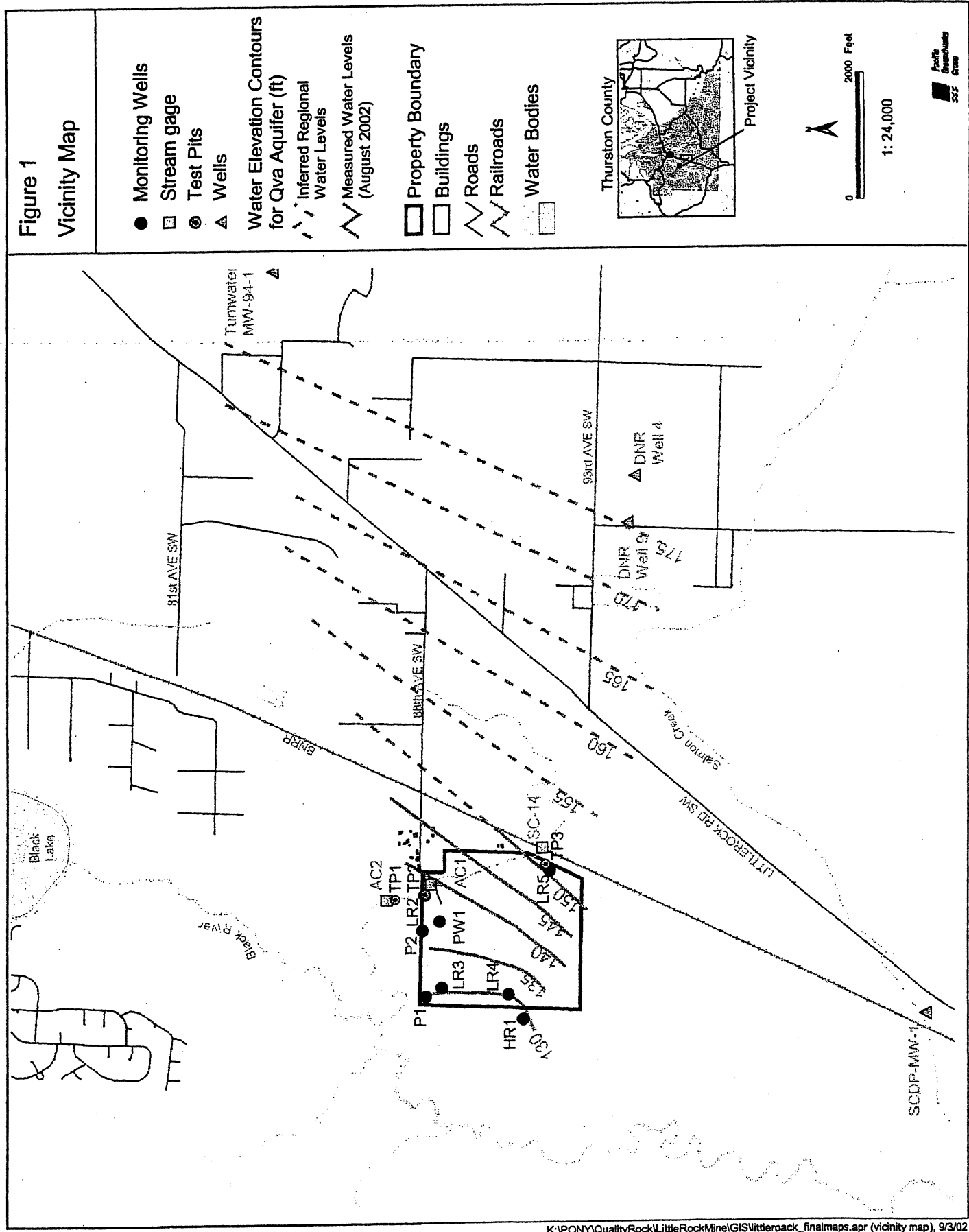
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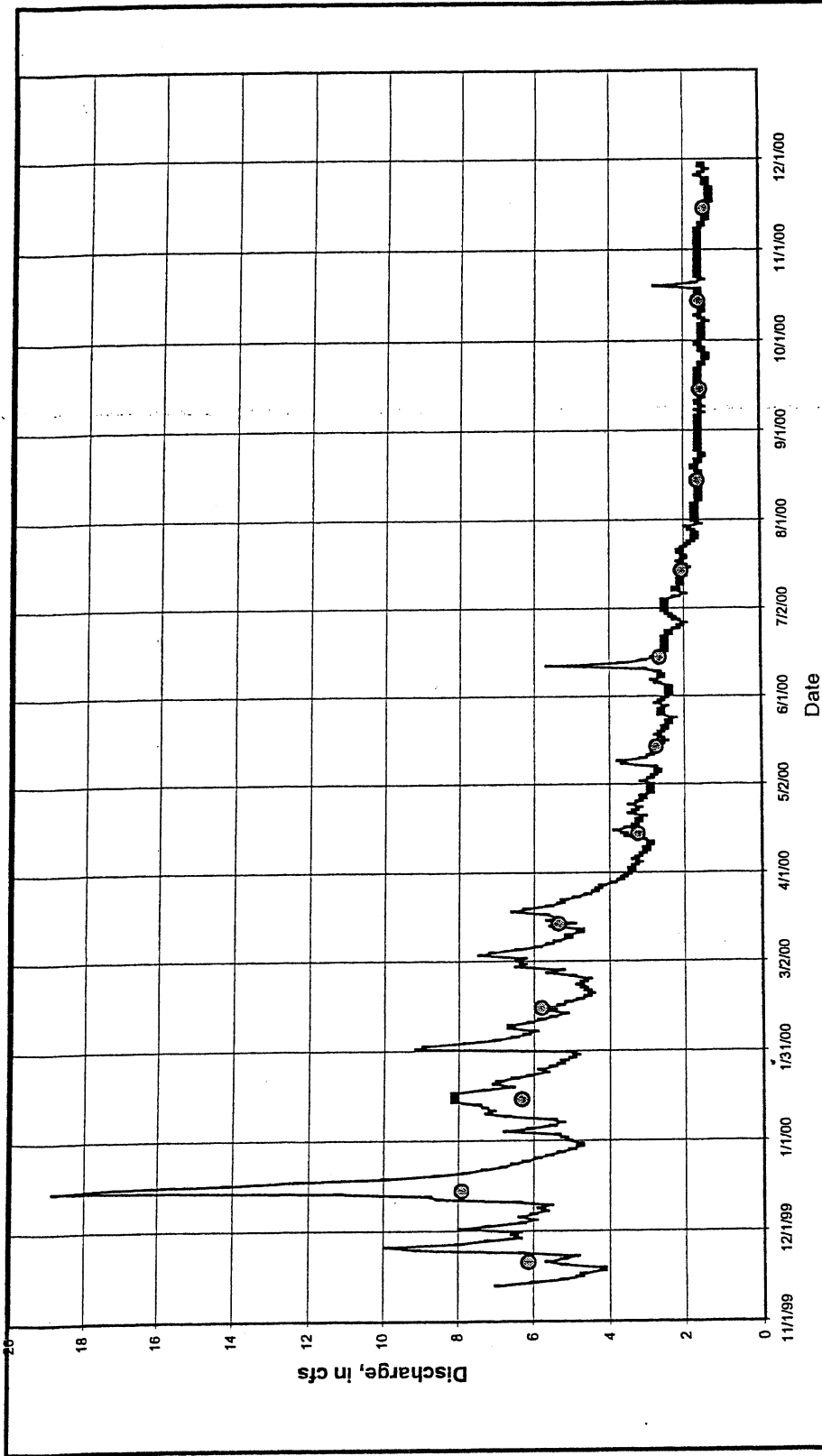


Figure 2.
Daily and Monthly Average Discharge in Ashley Creek

Quality Rock Products
 Little Rock Mine
 JE0209



—+— Average Daily Discharge
 —●— Average Monthly Discharge

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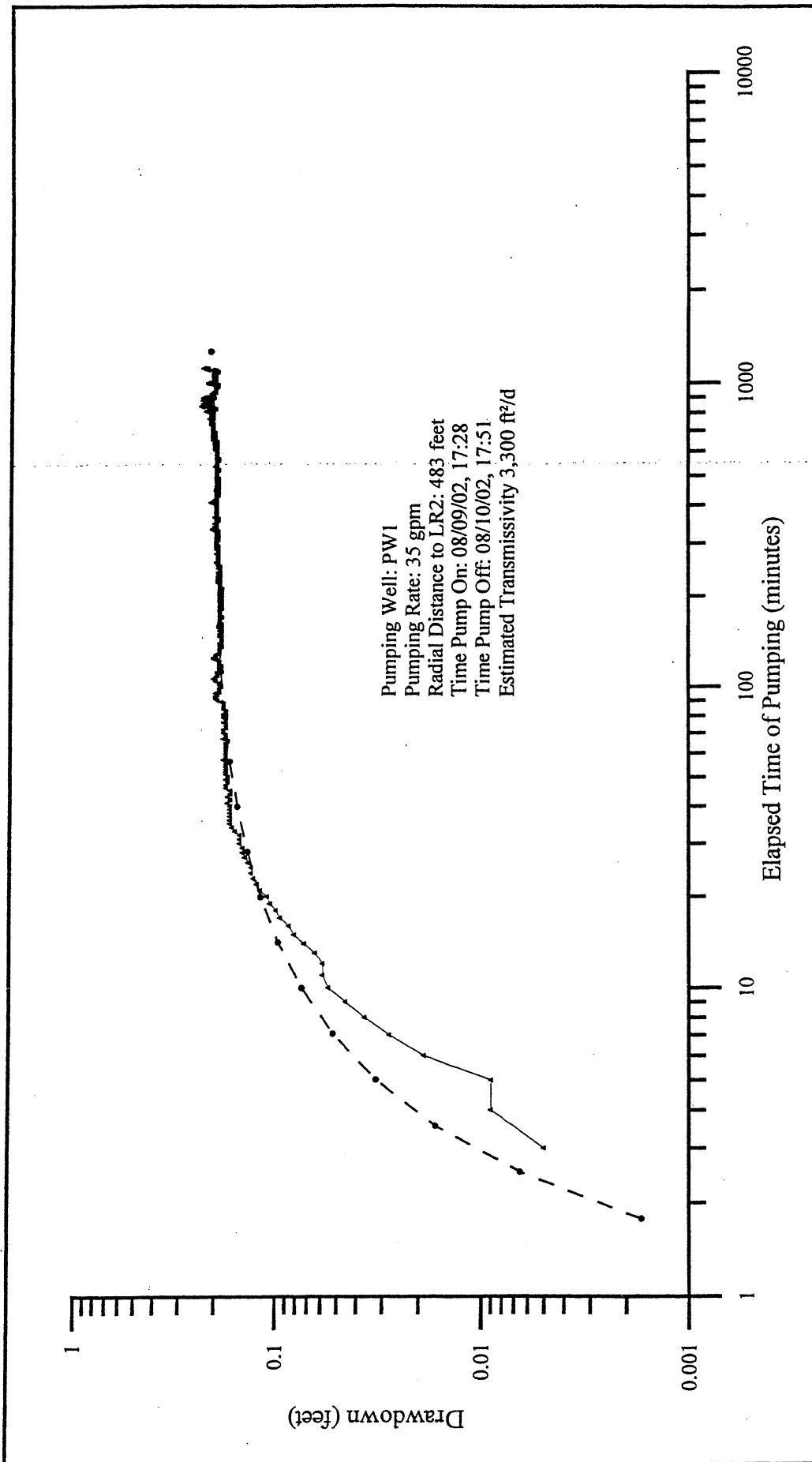


Figure 3

**Aquifer Test -- Drawdown Response and Analysis
for Observation Well LR2**

Quality Rock Products
 Little Rock Mine
 JE0209



---•--- Fitted Moench Unconfined Type Curve

—•— Measured Drawdown

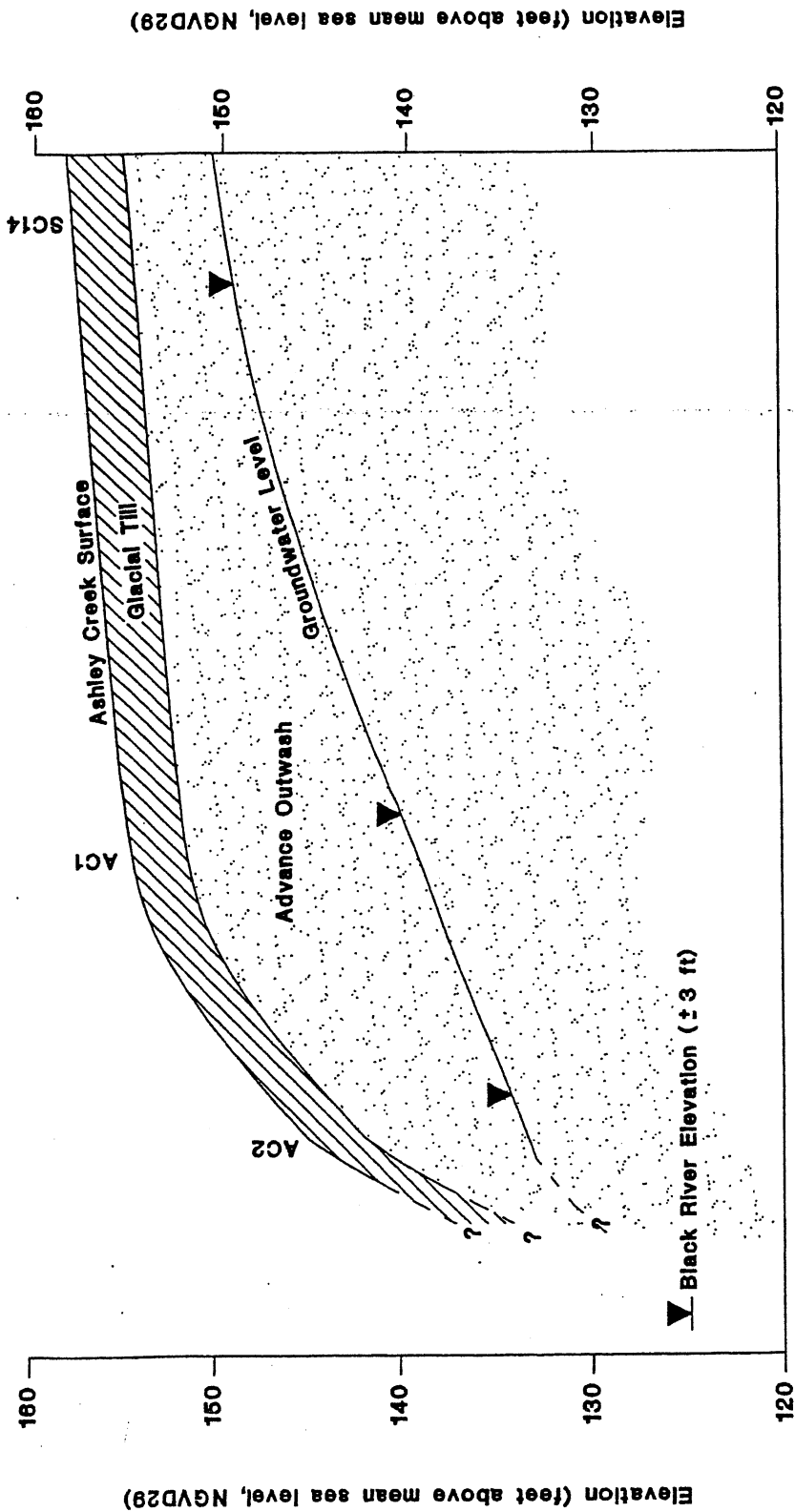




FIGURE 4
Ashley Creek Elevation Compared to
Groundwater Elevation in the Qva Aquifer

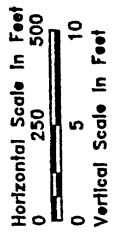


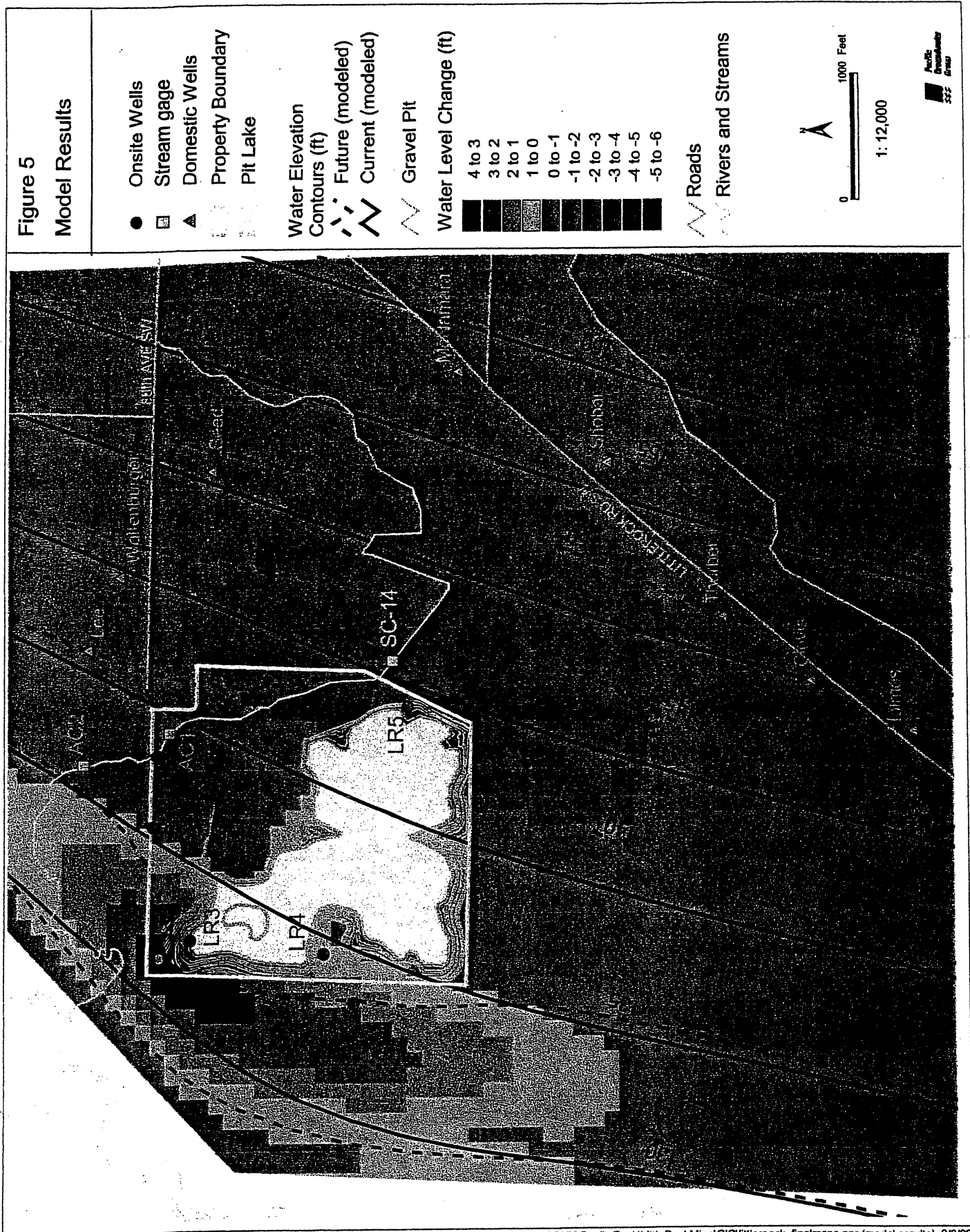
Quality Rock Products
 Little Rock Mine

KT0206, AshleyCreek.dwg, 08/27/02

LEGEND

-  Glacial Till
-  Advance Outwash





Tables

Table 1. Survey Data for Wells and Stream Gages

Station Name	Northing (feet); NAD83/91	Easting (feet), NAD83/91	Elevation (feet), NGVD29	Description
AC1	Not surveyed	Not surveyed	157.39	Gage AC1, RP on top of culvert, downstream end, at culvert on Ashley Creek at mine entry road
AC2	Not surveyed	Not surveyed	147.32	Gage AC2, RP on top of culvert, downstream end, at culvert on Ashley Creek beneath power lines
SC-14	602614.06	1019655.02	163.41	Gage SC-14, staff gage level 0.00
HR1	601284.07	1018088.85	147.91	HR1, well in Hard Rock Mine, adjacent to Littlerock Mine on west, 3' concrete tile casing
LR2	602853.56	1020074.55	162.68	LR2, top of 2" PVC casing
LR3	602579.74	1018600.33	202.93	LR3, top of 2" PVC casing
LR4	601516.19	1018479.05	196.56	LR4, top of 2" PVC casing
LR5	600864.35	1020445.07	171.15	LR5, top of 2" PVC casing
PW1	602614.06	1019655.02	172.98	PW1, Domestic well at Littlerock Mine

Table 2. Change in Groundwater Recharge Due to Pit Lake

	Forest on Outwash (37.5 acres)				Forest on Till (37.5 acres)			
	inches/yr	ac-ft/yr	cfs	gpm	in/yr	ac-ft/yr	cfs	gpm
Current ET ¹	20.5	64.1	0.0884	40	21.09	65.9	0.0910	41
Future ET	24.5	76.6	0.1058	47	24.53	76.6	0.1058	47
Current SRO ²	0.0001				0.004			
Change	-4.0	-12.5	-0.0174	-7.8	-3.44	-10.7	-0.0148	-6.6
	Average	Total	Total cfs	Total				
	in/yr	ac-ft/yr		gpm				
Combined Areas (outwash and till)	-3.73	-23.2	-0.0322	-14.5 ³				

¹ ET = Evapotranspiration

² SRO = Surface run off

³ Approximately equivalent to 3 or 4 garden hoses discharging continuously.

Table 3. Estimated Change in Groundwater Level at Selected Wells Due to Mining.

Well Owner	Change in Groundwater Level (feet)
Clovis	-1.3
Holmes	-1.0
Lee	-0.8
McNamara	-1.5
Seed	-1.5
Shobar	-1.7
Thurber	-1.7
Wolfenburger	-1.2

Table 4. Field-Measured Groundwater Quality Parameters in Monitoring Wells at Little Rock (Fairview) Mine.

Owner Well Name	Date	WA Unique Well ID	Water Temperature (°C.)	pH	Specific Conductance (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/l)
LR2	08/21/02	AHE101	11.6	5.70	0.098	0	5.51
LR5	08/21/02	AHE104	10.9	5.58	0.073	1	6.23
P1	04/11/94	****	17.5	5.89	0.003		
P2	04/11/94	****	12.6	5.36	0.258		
P3	04/01/92	****	12.8	6.8			
P3	04/11/94	****	11.7	6.95	1.014		
P4	04/01/92	****	11.1	7.6			
P4	04/11/94	****	11.8	6.37	0.46		
P5	04/11/94	****	10.4	6.04	0.19		
PW1	08/21/02	****	12.5	5.53	0.073	1	5.76

Attachment A. Logs for On-Site Borings and Test Pits

Key To Pacific Groundwater Group Soil Boring Logs

Sample Descriptions

Classification of soils in this report is based on visual field observations that include moisture condition, color, grain size, and plasticity estimates. The field estimates should not be construed to imply field or laboratory testing, unless presented explicitly. Visual classification methods of ASTM D 2488 were used as an identification guide.

Soil descriptions follow the format: moisture, color, minor constituents, MAJOR CONSTITUENT, and additional remarks. Moisture and minor constituents are defined below.

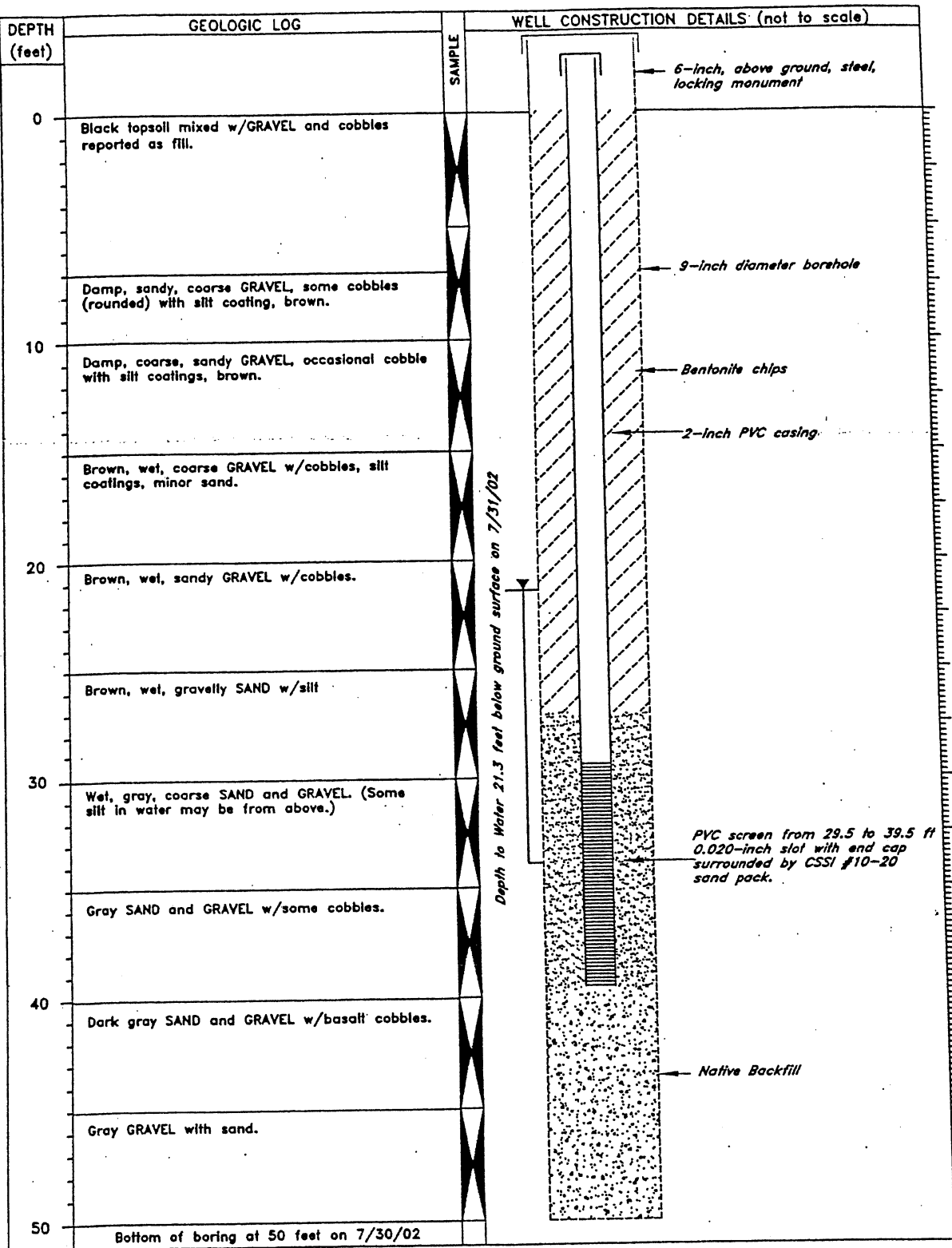
Moisture

- Dry denotes little perceptible moisture.
- Damp denotes minor perceptible moisture.
- Moist denotes perceptible moisture, near saturation.
- Wet denotes major perceptible moisture, or saturated.

Minor Constituents Example Descriptions

Estimated Percentage

<i>Not included</i> in description	0 to 5
<i>Slightly</i> sandy, gravelly, silty, or clayey	5 to 12
<i>Sandy</i> , gravelly, silty, or clayey	12 to 30
<i>Very</i> sandy, gravelly, silty, or clayey	30 to 50



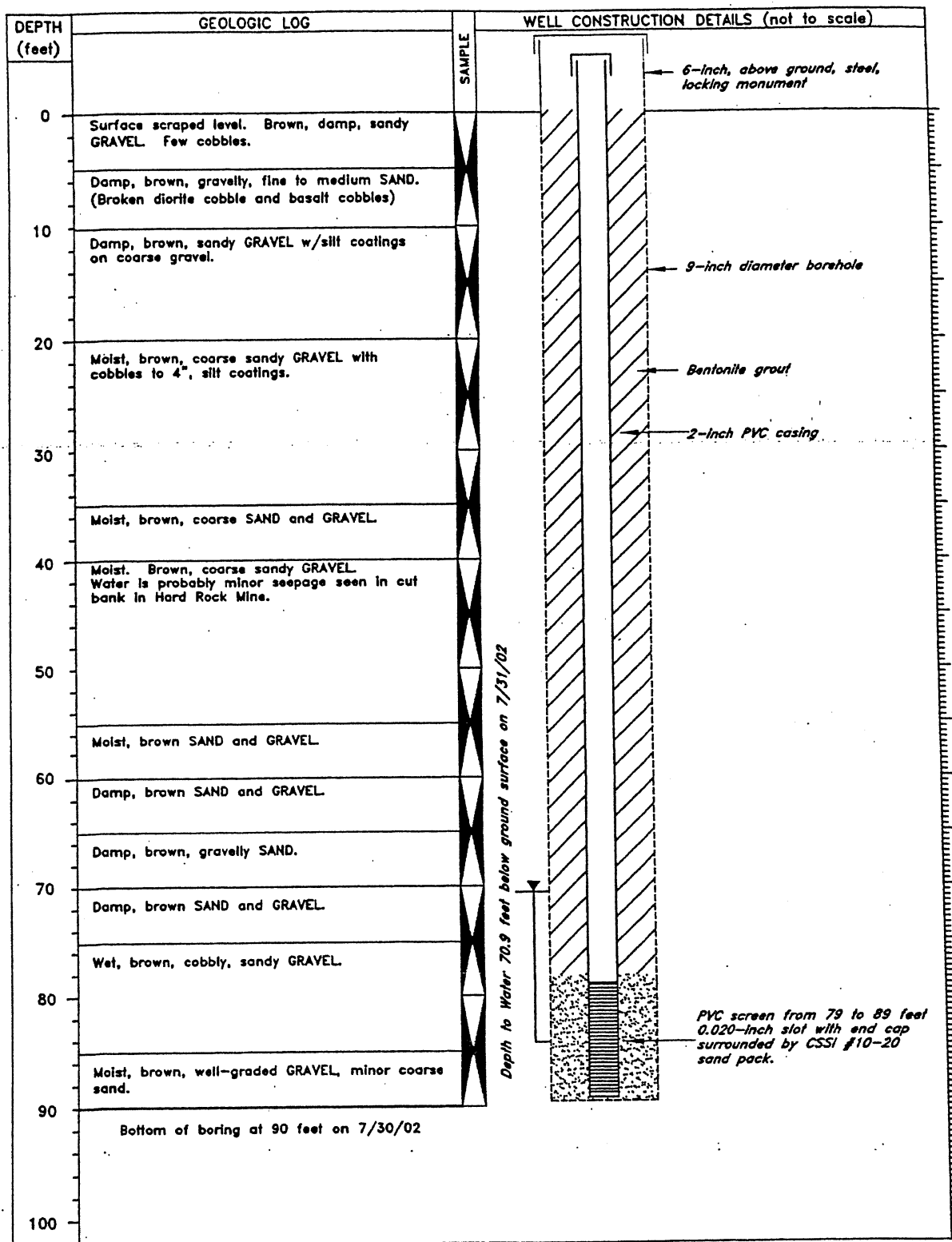
PROJECT NAME: Little Rock mine
 DRILLING METHOD: Becker Hammer Drill
 DRILLER:
 FIRM: Layne Christensen
 CONSULTING FIRM: Pacific Groundwater Group
 REPRESENTATIVE: Linton Wildrick
 LOCATION: NE Corner by Entry Rd, 50' from Ashley Creek

WELL NAME: LR2
 UWID No. AEH101
 MEASURING POINT ELEV.: 162.68 ft
 DATUM: NGVD 29
 INSTALLED: 7/30/02

GEOLOGIC LOG AND AS-BUILT FOR WELL LR2

Hydrogeologic Analysis for
 Little Rock Mine
 Thurston County, WA
 JC0209, LR2.dwg, 8/24/02

 Pacific Groundwater Group



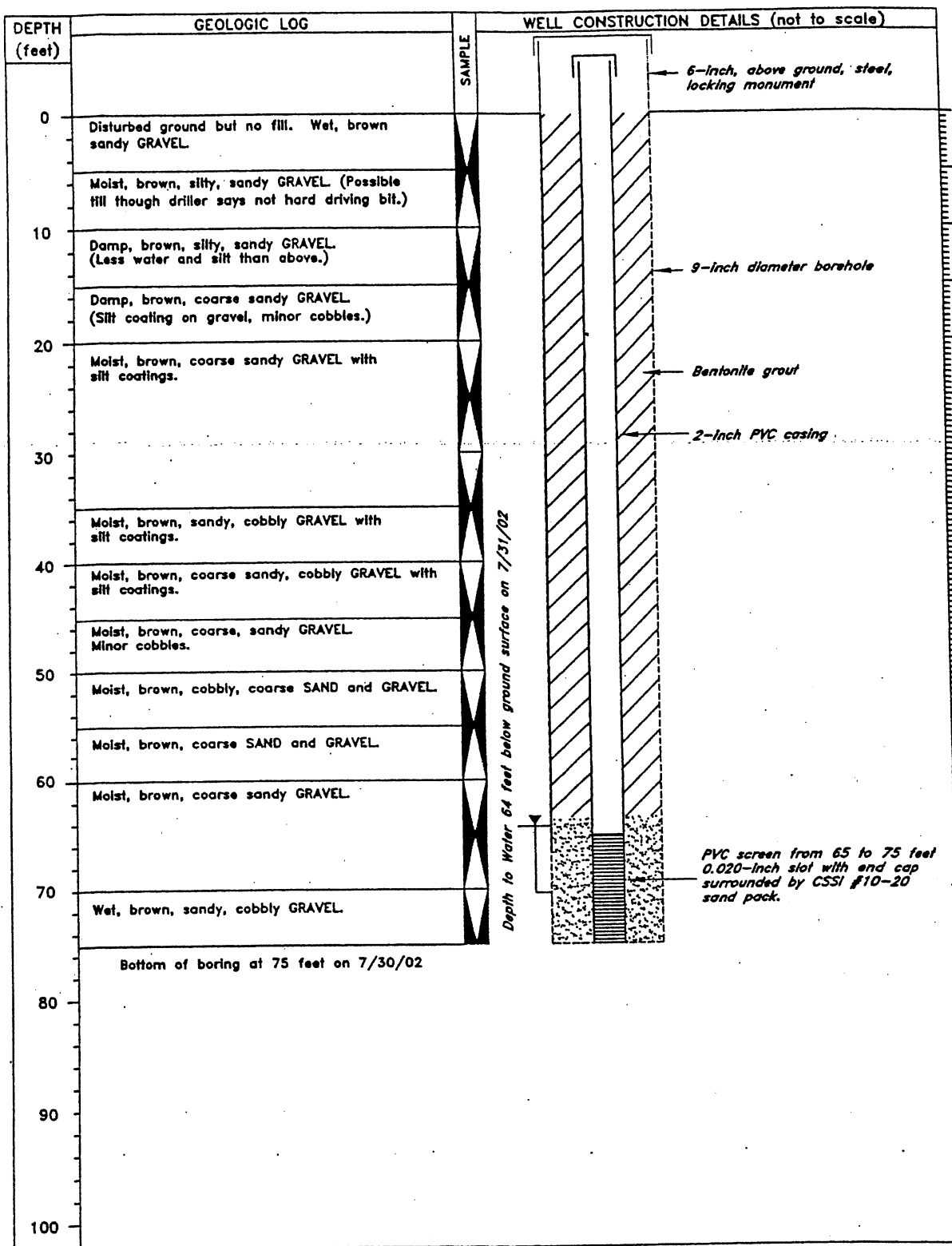
PROJECT NAME: Little Rock Mine
 DRILLING METHOD: Becker Hammer Drill
 DRILLER:
 FIRM: Layne Christensen
 CONSULTING FIRM: Pacific Groundwater Group
 REPRESENTATIVE: Linton Wildrick
 LOCATION: NW Corner of Little Rock Mine

WELL NAME: LR3
 UWID No. AEH102
 MEASURING POINT ELEV.: 202.93 ft
 DATUM: NGVD 29
 INSTALLED: 7/30/02

GEOLOGIC LOG AND AS-BUILT FOR WELL LR3

Hydrogeologic Analysis for
 Little Rock Mine
 Thurston County, WA
 JC0208, LR3.dwg, 8/26/02





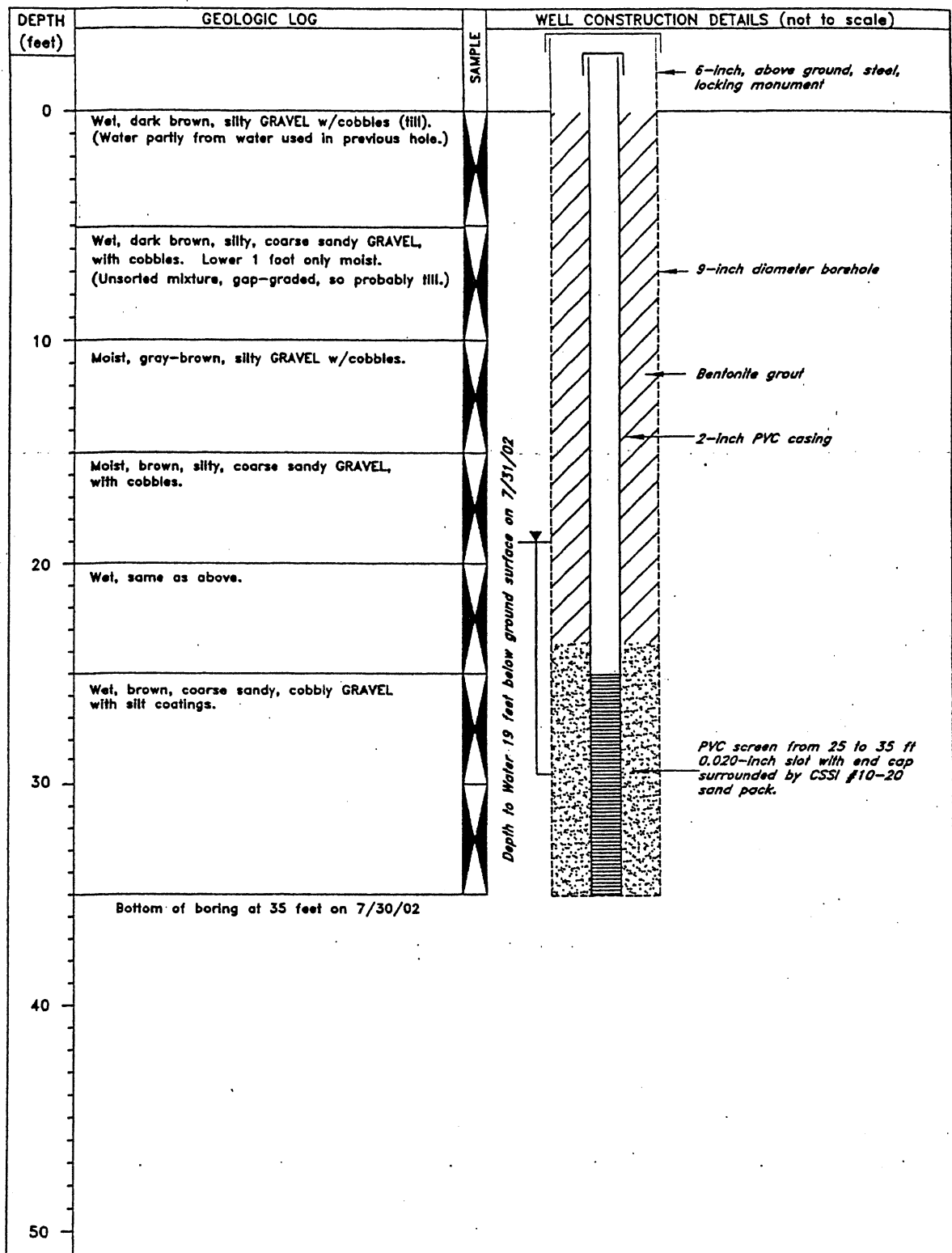
PROJECT NAME: Little Rock Mine
 DRILLING METHOD: Becker Hammer Drill
 DRILLER:
 FIRM: Layne Christensen
 CONSULTING FIRM: Pacific Groundwater Group
 REPRESENTATIVE: Linton Wildrick
 LOCATION: SW Corner of Little Rock Mine
 ~50' West of Power Line Tower

WELL NAME: LR4
 UWID No. AEH103
 MEASURING POINT ELEV.: 196.56 ft
 DATUM: NGVD 29
 INSTALLED: 7/30/02

GEOLOGIC LOG AND AS-BUILT FOR WELL LR4

Hydrogeologic Analysis for
 Little Rock Mine
 Thurston County, WA
 JC0208, LR4.dwg. 8/24/02

Pacific Groundwater Group



PROJECT NAME: Little Rock Mine
 DRILLING METHOD: Becker Hammer Drill
 DRILLER:
 FIRM: Layne Christensen
 CONSULTING FIRM: Pacific Groundwater Group
 REPRESENTATIVE: Linton Wildrick
 LOCATION: SE Corner of Mine
 ~300 feet from Sand Creek

WELL NAME: LRS
 UWID No. AEH104
 MEASURING POINT ELEV.: 171.15 ft
 DATUM: NGVD 29
 INSTALLED: 7/30/02

GEOLOGIC LOG AND AS-BUILT FOR WELL LR5

Hydrogeologic Analysis for
 Little Rock Mine
 Thurston County, WA
 JC0209, LRS.dwg, 8/28/02

Pacific Groundwater Group

Test Pit Logs

P1

Location: 20' east of power transmission lines and 120' south of Ashley Creek, on Worthington Property.

Depth (feet)	Description
0-5	Damp, brown, slightly silty, slightly sandy, coarse GRAVEL
5-6	Same as above, with lens of sandy, coarse GRAVEL
6-7	Damp, gray, silt-bound GRAVEL (Till)
7-9	Damp, gray, bedded sandy GRAVEL
9-12	Moist to wet, gray, silt-bound GRAVEL (Till), water table at 11.5 feet

P2

Location: 15' north of monitoring well LR2, 100 feet west of Littlerock Mine entry road, and 30' south of Ashley Creek.

Depth (feet)	Description
0-2	Black topsoil
2-5	Damp, brown, gravelly CLAY (Till) with wood fragments
5-7	Damp, brown, silty SAND and GRAVEL
7-8	Damp, brown, sandy GRAVEL and COBBLES, silt coated
9-9.5	Damp, gray, sandy GRAVEL, with scattered cobbles

P3

Location: Southeastern corner of Littlerock Mine, about 200' west of railroad grade.

Depth (feet)	Description
0-2	Black topsoil
2-5	Damp, brown to gray, clayey GRAVEL and COBBLE, very hard to excavate, sandy from 4-5 ft. (Till)
5-7	Damp, brown, coarse sandy GRAVEL, with single 20-inch diameter boulder
7-9	Moist, gray, sandy, gravelly COBBLE

Attachment B. Discharge Measurements in Ashley Creek

Stream Discharge Calculation

Site ID = SC-14

Site Name = Ashley Creek at Railroad culvert west of Little Rock Road

Stage: 1.26 ft. Date: 08/09/02 Time: 13:30

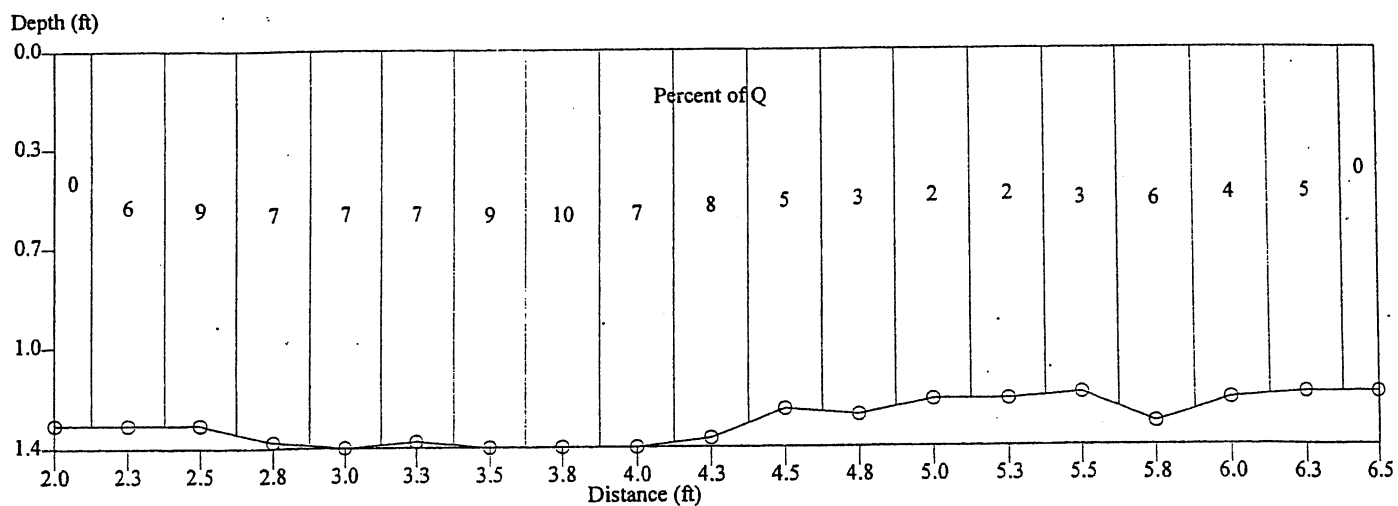
Comment:
railroad.

Point	Distance	Depth	Area	Velocity1	Velocity2	q
1	2.00	1.30	0.16	0.00	0.00	0.00
2	2.25	1.30	0.32	0.23	0.00	0.07
3	2.50	1.30	0.32	0.35	0.00	0.11
4	2.75	1.36	0.34	0.28	0.00	0.10
5	3.00	1.38	0.34	0.27	0.00	0.09
6	3.25	1.36	0.34	0.29	0.00	0.10
7	3.50	1.38	0.34	0.35	0.00	0.12
8	3.75	1.38	0.34	0.37	0.00	0.13
9	4.00	1.38	0.34	0.27	0.00	0.09
10	4.25	1.35	0.34	0.32	0.00	0.11
11	4.50	1.25	0.31	0.22	0.00	0.07
12	4.75	1.27	0.32	0.14	0.00	0.04
13	5.00	1.22	0.31	0.10	0.00	0.03
14	5.25	1.22	0.31	0.08	0.00	0.02
15	5.50	1.20	0.30	0.14	0.00	0.04
16	5.75	1.30	0.32	0.23	0.00	0.07
17	6.00	1.22	0.31	0.19	0.00	0.06
18	6.25	1.20	0.30	0.20	0.00	0.06
19	6.50	1.20	0.15	0.00	0.00	0.00

Total Area = 5.83 sq. ft.

Average Velocity = 0.23 ft./sec.

Total Discharge = 1.33 cfs



Stream Discharge Calculation

Site ID = AC1

Site Name = Ashley Creek Above Mine Entry Road at 88th Ave.

Stage: ft. Date: 08/10/02 Time: 15:30

Comment:

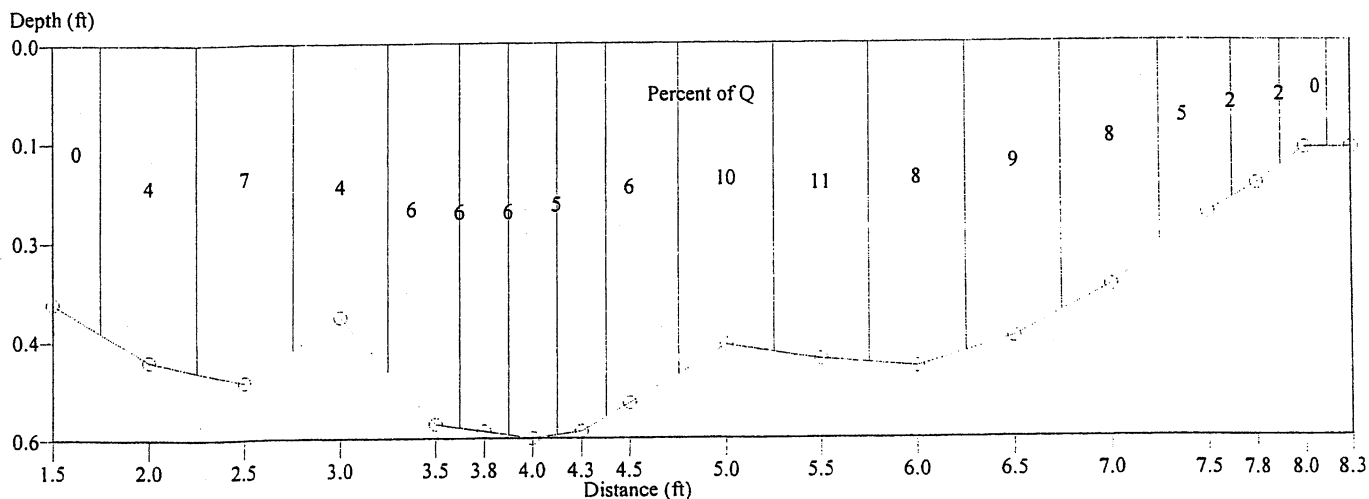
Substantially better velocities than below culvert yesterday. Stream losing between here and railroad bridge by about 0.4 cfs.

Point	Distance	Depth	Area	Velocity1	Velocity2	q
1	1.50	0.36	0.09	0.00	0.00	0.00
2	2.00	0.44	0.22	0.16	0.00	0.04
3	2.50	0.47	0.23	0.30	0.00	0.07
4	3.00	0.38	0.19	0.21	0.00	0.04
5	3.50	0.53	0.20	0.30	0.00	0.06
6	3.75	0.54	0.14	0.40	0.00	0.05
7	4.00	0.55	0.14	0.43	0.00	0.06
8	4.25	0.54	0.14	0.35	0.00	0.05
9	4.50	0.50	0.19	0.28	0.00	0.05
10	5.00	0.42	0.21	0.45	0.00	0.09
11	5.50	0.44	0.22	0.45	0.00	0.10
12	6.00	0.45	0.22	0.35	0.00	0.08
13	6.50	0.41	0.20	0.40	0.00	0.08
14	7.00	0.34	0.17	0.47	0.00	0.08
15	7.50	0.24	0.09	0.52	0.00	0.05
16	7.75	0.20	0.05	0.47	0.00	0.02
17	8.00	0.15	0.04	0.47	0.00	0.02
18	8.25	0.15	0.02	0.00	0.00	0.00

Total Area = 2.75 sq. ft.

Average Velocity = 0.34 ft./sec.

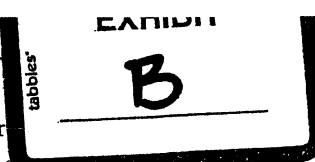
Total Discharge = 0.94 cfs



Appendix 5



COUN
Cathy
Dist
Diane
District Two
Robert N. Macleod
District Three



HEARING EXAMINER

BEFORE THE HEARINGS EXAMINER FOR THURSTON COUNTY

In the Matter of the Appeal of)	
)	FILE NO. SUPT 000788
Quality Rock Products, Inc.)	
)	FINDINGS, CONCLUSIONS
For Approval of a Special Use Permit.)	AND DECISION ON REMAND
)	

SUMMARY OF DECISION

The Special Property Use Permit to expand an existing gravel mine, replace a concrete batch plant, construct a hot mix asphalt plant, and resume concrete and asphalt recycling, as depicted on project plans labeled as Exhibit 1 is **GRANTED** subject to conditions.

SUMMARY OF PROCEEDING

Quality Rock Products, Inc. (Applicant) requested approval of a Special Use Permit (SUP) for the expansion of a gravel mine from an existing 26-acre site to 151 acres on property located generally at 4711 – 88th Avenue SW in Thurston County, Washington. The Applicant also requested approval to replace a previously approved concrete batch plant and to construct an asphalt hot mixing plant and to resume concrete and asphalt recycling.

A hearing on the request was held before the Hearings Examiner of Thurston County on the following dates: November 19, 2001, December 10, 2001, February 5, 2002 and February 11, 2002. On April 5, 2002 approval of a Special Use Permit for the expansion of an existing gravel mine and the establishment of associated accessory uses at 4711 – 88th Avenue SW. Approval was granted subject to conditions. A request for a setback reduction was denied.

Appeals of the Hearing Examiner Decision were filed with the Thurston County Board of Commissioners. On July 15, 2002, after considering the appeals in a closed record hearing, the

*Findings, Conclusions & Decision on Remand
Quality Rock Products, Inc.*

Page 1 of 24

SENT
DATE: 6-2-03
036

Board vacated the April 5, 2002 Decision and remanded the matter to the Hearings Examiner for further review. The Board's remand Order required the following issues be reviewed:

- I. "A detailed analysis of the impact to the groundwater, aquifer and the Black River, called for in Condition Y [in the Hearings Examiner's decision] prior to the issuance of the SUP, because if there are problems that can't be mitigated and alter the entire approval of the project which should be done up front and not several years down the road.

Further, remand on this issue addresses the Applicant's concern about being subject to future hearing on water quality impacts."

- II. "For the purpose of determining whether or not compliance with the road standards specified in Condition G [original Hearings Examiner's decision] and in TCC 17.20.090(C) resolve the safety issues, and if not whether or not an alternative access is required. If the Hearings Examiner determines that an alternate access is needed, he must take evidence on the impacts associated with the alternative."

- III. "A remand so that he [Hearings Examiner] can take evidence on what portion of the site is designated as a mineral resource land of long-term commercial significance."

- IV. Whether the uses approved in the 1985 and 1986 permits have been abandoned.

Subsequent to the remand order of the Board a hearing on the issues of remand was held by the Hearings Examiner of Thurston County on November 13, 2002 and February 10, 2003. At the hearing the following submitted testimony and evidence:

Nancy Pritchett, Thurston County Development Services Department
Scott Davis, Thurston County Roads and Transportation Services
Linton Wildrick
Nadine Romero
Bob Mead, Thurston County Public Health and Social Services Department
Laura Vandyke
Marion Smith
Roy Garrison
Darryl Bullington
Mary Ingalls
Stephen P. Palmer
Jerry Lee Dierker
Colleen Wasner
Jay Roach
Donald Houston
Cindy Wilson, Thurston County Development Services Department
Attorney David Brickin

Attorney David Ward
Attorney Jeff Fancher

At the remand hearings the following exhibits were submitted and were admitted as part of the official record, along with other exhibits that have been admitted as part of the record. The newly admitted exhibits were:

EXHIBIT 63 Thurston County Development Services Department Report dated November 13, 2002 - Supplement to Staff Report Dated November 19, 2001, and the following Attachments:

Attachment a Board of County Commissioners Decision on Appeal, dated July 15, 2002

Attachment b October 31, 2002 Letter from Robert Mead, Thurston County Public Health and Social Services Department

EXHIBIT 64 October 31, 2002 Memorandum from Robert Mead, Thurston County Public Health and Social Services Department

EXHIBIT 65 November 13, 2002 Memorandum from Scott Davis, Thurston County Roads and Transportation Services Department

EXHIBIT 66 Hydrogeologic Analysis prepared by Pacific Groundwater Group, dated October 2002

EXHIBIT 67 Washington State Department of Ecology Site Specific Fact Sheet (WAG 50-1449), dated May 1, 2002

EXHIBIT 68 Eight Photographs of Project Site

EXHIBIT 69 October 28, 2002 Memorandum from Laura Van Dyke, Heffron Transportation

EXHIBIT 70 Resume of Linton Wildrick, Associate Hydrogeologist

EXHIBIT 71 October 29, 2002 Letter from Nadine Romero regarding Summary Calculations for Quality Rock

EXHIBIT 72 Nadine Romero's November 6, 2002 Review of Pacific Groundwater Group Hydrogeologic Report for Quality Rock

EXHIBIT 73 Hydrogeologic Cross Section prepared by SubTerra, Inc., dated June 5, 2000 (Figure 12)

*Findings, Conclusions & Decision on Remand
Quality Rock Products, Inc.*

- EXHIBIT 74 Groundwater Temperature in Thurston County Monitoring Wells LRS-006 and LRS-007
- EXHIBIT 75 Geologic Vicinity Map prepared by SubTerra, Inc., dated November 20, 1999 (Figure 11)
- EXHIBIT 76 Testimony of Donald and Donna Huston, dated November 9, 2002
- EXHIBIT 77 June 4, 2002 Letter from Nancy Pritchett, Thurston County Development Services, regarding Follow Up to Site Visit Conducted on April 16, 2002
- EXHIBIT 78 Wetland Buffer Restoration Plan prepared by Ecological Land Services, dated July 11, 2002
- EXHIBIT 79 10 Photographs of the Quality Rock Project Site, dated November 2002
- EXHIBIT 80 January 24, 2003 Public Comment Letter from Donald W. Houston
- EXHIBIT 81 December 20, 2002 Public Comment Letter from Stephen P. Palmer with the following attachments: Appendix A: Letter from Stephen P. Palmer to Chuck Turley, Department of Natural Resources, dated December 9, 2002.
Does not include Appendix B.
- EXHIBIT 82 Supplemental Hydrogeologic Analysis for Littlerock Aggregate Mine, dated January 2003
- EXHIBIT 83 U.S. Geological Report – Water-Supply Paper 2492, by David S. Morgan and Joseph L. Jones, 1999
- EXHIBIT 84 U.S. Geological Survey – Water-Resources Investigations Report 99-4165, by Drost, Ely and Lum, 1999
- EXHIBIT 85 February 10, 2003 Memorandum from Robert Mead
- EXHIBIT 86 January 21, 2002 Memorandum from Russ Prior, Pacific Groundwater Group, to Phil Struck, Parametrix
- EXHIBIT 87 January 13, 2003 Letter from Laura Van Dyke to David Ward, subject: Littlerock Sand and Gravel Pit Expansion – Additional Analysis
- EXHIBIT 88 February 10, 2003 Memorandum from Nancy Pritchett to Hearing Examiner James Driscoll

EXHIBIT 89 February 10, 2003 Public Comment Letter from Darryl C. Bullington

EXHIBIT 90 February 10, 2003 Public Comment Letter from Stephen P. Palmer

EXHIBIT 91 February 10, 2003 Public Comment Letter from Jerry Lee Dierker

EXHIBIT 92 November 15, 2002 Memo from Pat Gebhardt, Department of Natural Resources to Interested Parties, submitted by Jay Roach, including brochure titled "The Chehalis Basin Partnership" and CD titled "Watershed Planning, Salmon Recovery."

The following Findings of Fact and Conclusions constitute the basis of the decision on the remand of the Hearings Examiner. The Findings of Facts address the issues raised by the Board in its Remand Order.

FINDINGS OF FACT

To support the Decision of April 5, 2002, the Hearings Examiner set forth 61 Findings of Fact. The Board vacated the Decision but did not change the Findings that were submitted. Accordingly, in order for the record to be complete and this Decision to be consistent with the testimony and evidence that has been submitted at all hearings, the following Findings of Fact from the April 5, 2002 Decision are incorporated as part of the Findings of Fact of this Decision:

- Findings of Fact 1 through 5;
- Finding of Fact 6, except for the second to last sentence of the Finding. That sentence is hereby deleted;
- Findings of Fact 7 through 16;
- Finding of Fact 17 is withdrawn as a Finding;
- Findings of Fact 18, with the exception of the first sentence of the Finding is withdrawn as a Finding;
- Findings of Fact 19 and 20 are withdrawn as Findings;
- Findings of Fact 21 is incorporated as a Finding for this proceeding;
- Findings of Fact 22 is withdrawn as a Finding;
- Findings of Fact 23 through 43 are incorporated as part of the Findings for this proceeding;
- Findings of Fact 44 through 61 are hereby incorporated as part of the Findings for this proceeding.

I. Water

Subsequent to the remand by the Board, the Applicant retained Pacific Groundwater Group (PGG) to prepare a hydrogeologic report for the expansion of mining activities on site. As part of its analysis PGG installed four exploration borings that were completed at monitoring wells;

excavated three back-hoe pits to examine the upper 18 feet of geologic materials; measured water levels in wells and surface water bodies; measured stream flows at two locations; conducted an aquifer test; developed a groundwater-flow model of part of the Ashley Creek groundwater basin; and, assessed effects of aggregate extraction on groundwater and surface water. *Exhibit 66*. Based on the collected data of these activities PGG submitted a Supplemental Hydrogeologic Analysis. In its January 2003 report PGG characterized the geology, groundwater and surface water of the Sand's property in the upper Ashley Creek basin; provided new data for the discharge of Ashley Creek at two previously measured sites and at the Sand's property; and, additional data of groundwater at the Littlerock mine and the Sand's property. *Exhibit 82*.

Ground Water

1. The Littlerock Mine lies within the Upper Chehalis River Basin. The groundwater from the mine flows toward the Black River, a tributary of the Chehalis River. *Exhibit 66*. As part of the remand review the Applicant had an additional hydrogeologic analysis prepared by its consultant, Pacific Groundwater Group (PGG). *Exhibit 66*. The analysis included a study of the geologic makeup of the mine and surrounding areas and drilling of four monitoring wells and three backhoe pits. Three shallow test pits, TP1, TP2, TP3 located along Ashley Creek were dug: TP1 is off-site to the northwest; TP2 is immediately south of the northern property boundary about fifty feet from Ashley Creek; and TP3 is located near well LR5, west of Ashley Creek and SG-14. *Exhibit 66; Testimony of Mr. Wildrick*. There was till at ground surface at TP1, TP2, and TP3.¹
2. Vashon Advance Outwash (Qva) (sometimes referred to as "hardpan" or "glacial concrete") commonly occurs below Vashon till, but can occur at surfaces where the till has eroded. At the Mine site the Qva has formed an aquifer with moderate to high permeability. *Exhibit 66, pages 3 & 4*. The Qva is the primary source of aggregate for the Littlerock Mine.
3. Weathered glacial till in wetland areas is characterized by poorly drained soil with slow permeability. These characteristics are present on site. McKenna gravely silt loam and Alderwood gravelly sand loam have formed in the wetland areas along the eastern edge of the mine along Ashley Creek. *Testimony of Mr. Wildrick*. PGG determined that while there is a till layer at the surface of certain areas of the mine, there are discontinuities, or windows that occur on and near the mine site. The till geologic unit functions as an aquitard, which is a layer of rock having low permeability that stores groundwater but delays its flow. *Exhibit 66; Testimony of Mr. Wildrick*.
4. From August 9, 2002 to August 12, 2002 the Applicant's consultant conducted an aquifer test in the Qva aquifer. The well used in the test (PW-1) was thought to be 40 feet deep, although there was no driller's log to confirm this. The consultant testified that it is

¹ The citations to the test pits, gauging sites and stations are set forth in detail in Exhibit 66. Whenever such a citation is used in these findings it is referenced to Exhibit 66.

common practice to use USGS data to determine the depth of aquifer thickness. An aquifer thickness of 42 feet, based on USGS mapping, was considered to be a conservative estimate for the thickness on site. *Testimony of Mr. Wildrick.* The well was pumped continuously for 48 hours at a constant rate of 35 gallons per minute. Water levels were monitored in LR2, LR3, LR4 and LR5 during the test and for another 36 hours after pumping ceased. A drawdown was observed only in LR2. The result of the analysis, based on Moench method, was a transmissivity of approximately 3,300 square feet per day. Based on an aquifer thickness of 42 feet (Drost), the hydraulic conductivity was estimated to be 80 feet per day. *Exhibit 66: October 2002 Hydrogeologic Analysis.*

5. In addition to drilling, the PGG consultants walked the shores of Ashley Creek. From their observations they determined that the creek bed was hard sand and gravel with a till-like composition. Based on the observations and the drilling data the consultants' interpretation was that the till is continuous beneath the creek. This interpretation of till supports the presence of the creek and wetlands and is consistent with the mapping of the area. *Testimony of Mr. Wildrick.*
6. In addition to aquifer thickness, PPG measured Ashley Creek at various gauging sites. Based on this data and that of the Qva aquifer, PPG's findings were that the underlying groundwater on site was considerably lower than the surface water in Ashley Creek. This finding was supported by the till in the bed of Ashley Creek and the measured loss of discharge from Ashley Creek. These water elevations of the Creek and the aquifer support the conclusion that none of the mine property drains into Ashley Creek. *Exhibit 66, and Exhibit 25 (Subterra study).*
7. The GPP report reached different groundwater conclusions than the original groundwater report prepared by SubTerra (*see exhibit 25*). The GPP interpretations are different – and more reliable – because they are based on more extensive and detailed information. The SubTerra report was based on domestic driller's logs while GPP obtained its data from pits and borings at or near the creek. This closer proximity provided a more accurate reading of the groundwater, the creek and the recharge. *Testimony of Mr. Wildrick.*

Ashley Creek Discharge

8. Significant measurements of Ashley Creek have occurred. For approximately a year the discharge of the Creek was gauged continuously at a culvert under a nearby railroad grade (station SC-14) by Thurston County. PGG measured the discharge of Ashley Creek at a point 1,880 feet downstream from SC-14. Another Ashley Creek measurement was taken at site AC2, approximately 830 feet downstream for AC1. The Ashley Creek stages were calculated from gage and culvert measurements during August 2002 and the measuring point elevations were surveyed to the NGVD29 datum. Based on the data from these sites Ashley Creek was losing 0.39 cfs. (From SC-14 [total discharge 1.33cfs] to AC1 [total

discharge 0.94 cfs.].² *Charts are found in Exhibit 66.*) The loss of discharge in the creek showed a loss which can happen only when the groundwater level is lower than the creek level.” *Exhibit 66, Page 6.* Based on data from monitoring wells and stream flow measurement and a comparison of the groundwater heads with creek stages, the water table lies eight or more feet below Ashley Creek between SC-14 and AC2. *Exhibit 66; Exhibit 82.* Downgradient, at the Black River, the groundwater table rises to meet the river. *Testimony of Mr. Wildrick.* The analysis also concluded that Ashley Creek may be perched above the regional water table. *Testimony of Mr. Wildrick.*

9. The County’s representative submitted that based on the materials and information provided from the four new monitoring wells, along with the three back-holed borings and information from existing wells adequate information is available to determine water quality and water drawdowns that would result from the final phase of the operation. According to Mr. Mead the reaction and the observation wells to pumping that was performed at Station PW-1 provides sufficient information about aquifer conditions under the wetland and the eastern boundary. According to Mr. Mead, it provides predictive information as to how the area would react to aquifer stress. The water quality and drawdown would not be impacted by this aquifer stress. *Exhibit 64; Testimony of Mr. Mead.*
10. The till underlying Ashley Creek functions as an aquitard. The consultant’s explanation of a loss of water upstream to downstream is that the thin layer of till beneath Ashley Creek is not impermeable, even though it is continuous. *Testimony of Mr. Wildrick.* The consultant submitted that it would be possible for groundwater levels to recharge the stream if the groundwater were high enough. However, he estimated that in this case the groundwater level would have to rise seven or eight feet to influence the creek. *Testimony of Mr. Wildrick.*
11. Due to the perched condition, the water table is removed hydraulically from the stream. As long as the water table lies below the base of the till, its level will not affect the creek leakage. In other words, the leakage rate from Ashley Creek will not change or increase or decrease in response to changes in aquifer water levels. Therefore, the proposed pit lake will not affect the flow into Ashley Creek. This interpretation is in agreement with the interpretations by SubTerra (2000) and Mead (2002).
12. The Thurston County Public Health & Social Services Department water expert, Robert Mead, submitted that based on the materials and information received from the four new wells, three borings, an aquifer pumping test, water level measurements and detailed computer modeling the maximum lowering of water levels at any well will be no greater than 1.7 feet. According to Mr. Mead the results verify that the mining will not affect water levels in Ashley Creek. *Exhibit 64.*

² The 0.4 loss was a “spot value” based on one day. The 0.4 cfs loss represented 25% of the stream flow on August 10

Water Quantity and Quality of Pit Lake:

After the site has been mined it is the intent to reclaim it with the creation of a lake. Condition Y of the April 5, 2001 decision of the Hearing Examiner conditioned the creation of the lake on further review at the appropriate time. The Board in its order directed "Further, remand on this issue addresses the Applicant's concern about being subject to future hearing on water quality impacts."

13. Changes to the site from the till stripping and creation of the lake were modeled using HSPF. The model was used to estimate the evapotranspiration rates for the pit lake area under original forested conditions.³ Evapotranspiration, which is how water returns to the atmosphere, includes both evaporation from free water surfaces and transpiration from plants.
14. The future maximum evapotranspiration rate was estimated from pan evaporation data. The pan evaporation data came from records developed at the Puyallup Agricultural Extension Service site from October 1955 through September 1999. For pre-mining conditions, the vegetation was assumed to be forest, the slope gentle to flat, and geology type of ½ Qva and ½ till based on USDA soil maps. The pan evaporation rate was calculated using the USDA's daily pan evaporation record and pan evaporation coefficients of 0.7 and 0.8. The estimated change in recharge was calculated as follows: the difference between evaporation under future lake condition and evapotranspiration plus surface runoff under current condition.
15. Estimates were submitted by GPP that the average annual evaporation from the pit lake would be two feet per year. This figure would exceed the historic evapotranspiration rate by 3.7 inches per year but is considered a small change from the vegetated to the lake effect. *Exhibit 66, page 17, table 2; Testimony of Mr. Wildrick.*
16. The program GFLOW2000 was used to evaluate the effect of the pit lake and the expansion on groundwater levels in nearby wells and on groundwater discharge to the Black River valley. Figure 5 of Exhibit 66 provides the model results. The groundwater level is expected to drop up to six feet along the eastern edge of the mine, which, according to GPP, represents the maximum impact on the aquifer. This drop amount would decrease as the water flows east. For residential wells, the change is expected to be between 0.8 feet and 1.7 feet. The available drawdown for a well is typically between 10 and 30 feet. Based on this data the Applicant's consultant testified that if the domestic well has at least 10 feet, the owner will not notice a difference in pumping rate. *Testimony of Mr. Wildrick.*
17. Table 3 of Exhibit 66 depicts the estimated change in groundwater level at the Clovis, Holmes, Lee, McNamara, Seed, Shobar, Thurber and Wolfenburger wells. The estimated

³ The assumption used in the model was that the mine site was originally forested and would be reclaimed with landscaping.

change in groundwater level ranged from a drop of 0.8 feet at the Lee well to a drop of 1.7 feet at the Shobar and Thurber wells. *Exhibit 66, page 17.*⁴

18. Another hydrology expert, Ms. Romero, applied data from the TEIS aquifer program and submitted that the drawdown of nearby domestic wells caused by creation of the pit lake to as much as ½ foot to 2 feet. *Romero Testimony; Exhibit 71.* While the drawdown predicted by Ms. Romero is slightly more than the drawdown defined by GPP, she considered the drawdown as significant. *Romero Testimony.* The Black Hills Audubon Society also questioned water quality in its post hearing memorandum. Citing Mr. Wildrick's testimony that "wood waste was common knowledge" the Society claimed that the Applicant had not done any water quality studies on the Black River and that the Department of Health's studies are limited at best.
19. According to the GPP representative, the GFLOW program was selected rather than the TEIS program because the TEIS program is not sophisticated enough to determine the lake's effect on the aquifer drawdown. The TEIS model is based on the water needed for a well and not the development of a lake. Further, according to GPP, the TEIS model would predict a greater drawdown caused by the lake because it is based on the incorrect assumption that pumping is occurring. *Testimony of Mr. Wildrick.* The Applicant's consultant testified that, using the GFLOW program, the expected well drawdowns are similar to the drawdown calculated by Nadine Romero, the BLAS consultant. *Testimony of Mr. Wildrick.*
20. The County representative, Mr. Mead, commented on Condition Y of the March 3, 2002 Decision of the Hearings Examiner. In Exhibit 64 Mr. Mead stated as follows:

"In response to this condition the following should be added to the Health Department's condition for this project: In designing the monitoring plan for this project, the Applicants must devise water level monitoring parameters that will validate the predictions of the affects on groundwater. As stated previously this monitoring plan must be approved by the Health Department before the expansion can proceed. If during future five-year reviews the actual effects of this project differ significantly from the predicted effects, the project must be modified to mitigate the effects. The project operators must agree before starting the expansion that if they are significantly out of compliance with the conditions of the approved monitoring plan at a future five-year review, the Health Department clearly has authority to close their operation."

⁴ The GPP Report notes: "the magnitude of water level changes may be as much as twice that shown in Figure 5 and Table 3, as a result of the increase in hydraulic gradient across the mine, as compared to the average gradient used for modeling. Nonetheless, these modeling results are appropriate for planning and permitting purposes, and indicate that the functioning of the local domestic water supply wells will not be materially impaired, because they have sufficient available drawdown (height of water above screen or open lower end of casing)." *Page 11.*

In essence this new information validates the previous Findings relating to groundwater. With the exception of the condition given above the conditions relating to groundwater require no other changes. *Exhibit 64.*

Mr. Mead also submitted data relating to water consumption for the mining activity proposed by the Applicant. Mr. Mead submitted the size of the proposed operation makes it improbable that the Applicant would use less than 5,000 gallons per day for the activities on site. Based on his data the County, through Mr. Mead, recommended that mining operations be limited to the production feasible with a maximum well pumpage of 5,000 gallons per day unless a Washington Department of Ecology water right is obtained and provided to Thurston County. Mr. Mead also recommended that cumulative flow measuring devices be provided and that the measurements be taken weekly. *Exhibit 85*

II. Traffic Safety

The second issue of remand was traffic safety. Findings of Fact Nos. 17 – 25, Conclusion 7(e) and Conditions G, H and I of the April 5, 2002 SUPT decision addressed roads and traffic, and should be referred to in conjunction with the Findings as set forth herein.

Based on its review of the Findings, Conclusions and Conditions, the Board determined as follows:

“Accordingly, a majority of the Board determined that this case needed to be remanded to the hearing examiner for the purpose of determining whether or not compliance with the road standards specified in condition G and in TCC 17.20.090(c) resolve the safety issues, and if not whether or not an alternative access is required. If the hearing examiner determines that an alternate access is needed, he must take evidence on the impacts associated with the alternate.”

The condition at issue, Condition G, read as follows:

“The access to the site shall comply with county and state road standards as specified in TCC 17.20.090. This ordinance may require road improvements to 88th Avenue SW. If alternate access is chosen to satisfy this requirement, the SUP proceeding shall be reopened for the limited purpose of considering impacts associated with the alternate access and to adjust conditions of approval accordingly.”

21. Subsequent to the Board’s July 15, 2002 Remand Order the Applicant purchased the Hard Rock Mine immediately south of the site. The purchase included easements for use of a permitted haul road (Hard Rock Haul Road) that connects with Littlerock Road SW approximately one mile south of 93rd Avenue SW. At Littlerock Road SW, the haul road has an 80-foot wide paved apron to accommodate truck-turning radii. The Hard Rock Haul Road is gated approximately 145 feet west of Littlerock Road SW. To the west of

the gate it narrows to approximately 20 feet. There are no homes or other businesses located along the Hard Rock Haul Road. *Exhibit 68; Exhibit 69, page 1; Testimony of Ms. VanDyke; Argument of Mr. Ward.*

22. The Applicant proposes to direct all *new* truck traffic generated by the expansion to the Hard Rock Haul Road. However, the Applicant argued that some truck traffic should be allowed to use 88th Avenue SW (also a permitted haul road) to the extent of historic usage. *Argument of Mr. Ward; Applicant's Closing Brief on Remand Issues.* In their respective presentations the County staff and the Applicant agreed that 70 truck trips per day (35 round trips) is an appropriate figure for historic usage. This number was based on the average truck trips between April 2000 and January 2001. In a letter dated May 4, 2001 (Exhibit 29), one of the Applicant's consultants submitted that the number of truck trips ranged from 50 per day (25 round trips) for average production months (18,000 tons), to 90 per day (45 round trips) for the peak month (August 2000). The Applicant agreed to the 70 truck trips per day figure even though the current use of 88th Avenue NE is higher (average of 100 truck trips per day (50 round trips) with peaks as high as 150 truck trips per day for the year prior to the November 2002 hearing date). The existing employee vehicle trips are approximately 20 per day. The employee trips would access the site from 88th Avenue NE and would not be counted as part of the 70 trip per day limit. *Exhibit 29; Exhibit 63, page 4; Applicant's Closing Brief on Remand Issues; Testimony of Ms. VanDyke.*
23. Although the County and the Applicant agreed that a 70 truck trip per day limit was reasonable based on historic usage, the parties differed as to how the truck trips should be determined and calculated. The County recommended that use of 88th Avenue SW be conditioned. The County submitted that the primary access to the project site for truck traffic should be the Hard Rock Haul Road, and that truck trips on 88th Avenue be limited to a maximum count of 70 truck trips per day. A truck trip would be defined as a truck either entering or leaving the site. Thus, 70 truck trips would be the equivalent of 35 trucks entering the site and 35 trucks exiting the site. Employees could continue to access the mine from 88th Avenue and their vehicular trips would be in addition to the allowed maximum truck traffic. Further, the County stated all truck trips outside the hours of 7:00 a.m. to 7:00 p.m. Monday through Saturday, as allowed under TCC 17.20.115(C), should only use the Hard Rock Haul Road. When counting truck trips, actual daily truck trips should be used. Truck trips should not be averaged over any period of time when determining truck trips per day. The County would require that the Applicant maintain a daily record of truck trips that documents how many trucks use 88th Avenue and how many trucks use the Hard Rock Haul Road. This daily record should be made available to Thurston County staff on request. *Exhibit 63.*
24. The conditions recommended by the County would establish a cap on truck traffic of 70 trips per day and would not allow the trips to be averaged. *Exhibit 63, page 7; Exhibit 88.* The Applicant argued that the maximum of 70 trips per day should be based on *average* trips, with no cap at 70 trips on any given day. The Applicant did not specify a time period to determine the averaging (e.g., weekly, monthly or yearly). He agreed "to maintain

detailed logs and provide the County with truck trip information on a monthly basis or as requested.” *Applicant’s Closing Brief on Remand Issues.*

25. Although the Black Hills Audubon Society (BHAS) supported use of the Hard Rock Haul Road rather than use of 88th Avenue SW, it argued that the proposed use of the haul road and supporting traffic analysis does not address the safety issue on 88th Avenue SW that prompted the Board’s remand. BHAS argued that because the safety issue has not been addressed, the Applicant has not met its burden of proof and the SUPT application should be denied. *Testimony of Mr. Marion Smith; Black Hills Audubon Society’s Post-Hearing Memorandum.*
26. 88th Avenue SW has a pavement width of 20 feet and no shoulders. In order to comply with County standards for local access roads, the road would have to be widened two feet for shoulders. Ten-foot wide clear zones (unobstructed right-of-way or easement) would have to be established. Currently only portions of the road have clear zones. In addition, the intersection of 88th Avenue SW and Littlerock Road does not have sufficient turning radius to satisfy AASHTO standards for truck traffic (Chapter 9). Trucks turning south onto Littlerock Road occupy the entire road during the turn. *Testimony of Mr. Marion Smith.*
27. The Applicant submitted a Supplemental Transportation Analysis (STA) (*Exhibit 69*) for the alternative site access. The STA assumed that “70 truck trips and about half of the daily passenger vehicles generated by the site would use 88th Avenue SW to access the site on an average day.” This number of truck trips represents the current use of 88th Avenue SW. Because approximately 80% of the project trips would access I-5 via 93rd Avenue SW, the STA focused on impacts to the intersection of 93rd Avenue SW and Littlerock Road SW. In addition, the STA addressed impacts to the intersection of the Hard Rock Haul Road and Littlerock Road SW. *Exhibit 69.* At the date of hearing the Thurston County Roads & Transportation Department had not adequately reviewed the STA. However, the Department indicated that the Applicant should be required to contribute pro rata shares to improvements at Littlerock Road SW and 93rd Avenue SW. *Exhibit 1, Staff Report.*
28. At the intersection of 93rd Avenue SW and Littlerock Road SW during the AM peak hour, the northbound and southbound movements would operate at LOS A in 2003 (the year the expanded pit is expected to be open and operational at a production of 500,000 tons) and 2009 (the year the expanded pit is expected to reach maximum production of 750,000 tons). Both of these levels of service continue with and without the project during average production days and average production days during the peak month. The eastbound movement would operate at LOS C in 2003 and 2009 both with and without the project, during both average production days and average production days during the peak month. LOS C is an acceptable level of service pursuant to Thurston County standards. The westbound movement would operate at LOS B in 2003 without the project, but would drop to LOS C with the project, during both average production days and average production

days during the peak month. The westbound movement would continue to operate at LOS C in 2009 during both average production days and average production days during the peak month. *Exhibit 69, pages 3-4.*

29. At the intersection of 93rd Avenue SW and Littlerock Road SW during the PM peak hour, the results are identical to those for the AM peak hour for the northbound and southbound movements (LOS A). The eastbound movement would operate at LOS B in 2003 without the project, but would drop to LOS C with the project, during both average production days and average production days during the peak month. The westbound movement would continue to operate at LOS C in 2009 during both average production days and average production days during the peak month. The westbound movement would operate at LOS C in 2003 both with and without the project, during both average production days and average production days during the peak month. The LOS would drop to D in 2009 with or without the project. LOS D operating conditions are substandard for areas outside of the Urban Growth Boundary. However, installation of a northbound right-turn lane on Littlerock Road SW would improve operating conditions to LOS C both with and without the project (as a revised condition of SUPT approval). County staff recommended that the Applicant contribute a pro-rata share towards installation of the turn lane. *Exhibit 69, pages 3-4; Exhibit 63, page 6.*
30. At the intersection of the Hard Rock Haul Road and Littlerock Road SW, the northbound and southbound movements would operate at LOS A during both the AM and PM peak hours, both in 2003 and 2009, with or without the project, during both average production days and average production days during the peak month. The eastbound left turn movement would operate at LOS C during the AM peak hour, whether in 2003 or 2009, with or without the project, during both average production days and average production days during the peak month, and either LOS B or C during the PM peak hour for those times. The eastbound right turn movement would operate at either LOS A or B during those times. *Exhibit 69, page 4.*
31. The traffic impacts of directing all truck traffic (including historic truck traffic) to the Hard Rock Haul Road is similar to the impacts described above. At the intersection of 93rd Avenue SW and Littlerock Road SW during the AM peak hour, the northbound and southbound movements would operate at LOS A in 2003 and 2009 both with and without the project, during both average production days and average production days during the peak month. The eastbound and westbound movements would operate at LOS B or C in 2003, but would operate at LOS B in 2009 both with and without the project, during both average production days and average production days during the peak month, with the installation of the northbound right-turn lane on Littlerock Road. During the PM peak hour, the northbound and southbound movements would operate at LOS A in 2003 and 2009 both with and without the project, during both average production days and average production days during the peak month. The eastbound and westbound movements would operate at LOS C with the installation of the northbound right-turn lane on Littlerock Road. *Exhibit 87.*

32. At the intersection of the Hard Rock Haul Road and Littlerock Road SW (assuming all truck traffic uses the Hard Rock Haul Road), the northbound and southbound movements would operate at LOS A during both the AM and PM peak hours, whether in 2003 or 2009, with or without the project, during both average production days and average production days during the peak month. The eastbound left turn movement would operate at LOS C during the AM peak hour, whether in 2003 or 2009, with or without the project, during both average production days and average production days during the peak month, and either LOS B or C during the PM peak hour. The eastbound right turn movement would operate at either LOS A or B during those times. *Exhibit 87.*

III. Designation of Mineral Resource Lands

The third issue of remand was the Comprehensive Plan designation of mineral resource lands. Finding of Fact No. 3 and Conclusion No. 5 of the SUPT decision addressed the Comprehensive Plan designation.

In its Remand Order the Board held:

“A majority of the Board determined that designation of a site as a Mineral Resource Land of Long Term Commercial Significance is relevant to analyzing its consistency with the comprehensive plan and protecting those lands. A majority of the Board determined that because it is unclear whether or not the entire parcel or only 80 acres is designated, or which 80 acres of the 151 acres is designated, this matter needs to be remanded back to the hearing examiner so that he can take evidence on what portion of the site is designated as a Mineral Resource Land of Long Term Commercial Significance.” *Board Decision of July 15, 2002.*

33. Thurston County Comprehensive Plan map M-43 depicts designated Mineral Resource Lands of Long Term Commercial Significance. The map labels the designated lands by number, and an accompanying legend provides more specific information, including the DNR permit number; the operator; the section, township and range; and the permitted acreage. Although, according to the shading and boundaries depicted on the map, the entire 151-acre parcel is designated a Mineral Resource Land of Long Term Commercial Significance, the legend indicates that the DNR permit issued to Milt Emerick of Fairview Sand and Gravel was for 26 acres, and that the number of acres permitted for such designation was 80. Based on this information, the County retracted its original determination that the entire 151-acre site is designated a Mineral Resource Land of Long Term Commercial Significance and submitted that only 80 acres is a designated Mineral Resource Land of Long Term Commercial Significance. Although Staff could not discern from the available information which 80 acres carry the designation, it submitted that because the northernmost 80 acres of the site includes the original 26-acre site it would be the logical boundary for the designated 80 acres. *Exhibit 63, page 5; Closing Argument of Thurston County dated March 21, 2003.*

34. The Black Hills Audubon Society supported the County's analysis, arguing that the language of TCC 20.30B.020 specifies that the "precise boundaries" of the designated lands are "as indicated on the DNR permit." *BHAS Post-Hearing Memorandum dated March 21, 2003*. However, the Society argued that the DNR permit was for 26 acres, not 80 acres, so that the designation is limited to 26 acres. *BHAS Closing Reply Brief on Remand Issues dated March 28, 2003; Letter from Jennifer Dold dated April 1, 2003*.
35. The Applicant argued that the Comprehensive Plan map depicts the entire 151 acres as designated. It based this contention on TCC 20.30B.020, which states that the designated lands are those shown on the map. However, the Applicant admitted that "the protections of the MRL overlay only extend to the edge of the DNR permitted area." The Applicant argued that the designation should extend to the entire parcel. The Applicant argued that a split overlay would be analogous to split zoning. *Applicant's Closing Brief on Remand Issues dated March 21, 2003*.

IV. Vested Rights

In the July 15, 2002 Remand Order the Board questioned whether the uses approved in 1985 and 1986 permits (issued by Thurston County) have been abandoned. This issue was addressed by attorneys in a proceeding prior to the remand hearing. On October 18, 2002 the Hearings Examiner determined that the 1985 permit (LTD-3-85) for mineral excavation of 26 acres and the 1986 permit (LTD-3-85) for a cement batch plant on site have not been abandoned, vacated or discontinued. In that same Order the Hearings Examiner set forth that Findings of Fact and Conclusions would be submitted at a later date. The following constitute the Findings of Fact for this decision.

36. On October 22, 1985 Thurston County issued a Limited Use Permit (LTD-3-85) to extract minerals from a 26-acre portion of the subject property and to operate a portable crusher/classifier. The permit was granted to the Fairview Sand & Gravel Company. In 1986 the LUP was amended to allow the addition of a dry cement batch plant. *Michael Kain Statement, October 7, 2002*. Reference is also made to Finding No. 4 of the April 5, 2002 decision of the Hearings Examiner, which sets forth in greater detail the history of the operation.
37. The mine that was permitted by LTD-3-85 operated continuously for approximately 10 years. Sometime around 1995 the mining activity ceased on site and the property owner sought to sell or lease to another mining operator. The property and operation was eventually purchased by the Applicant on January 25, 2000. Mining activity was resumed immediately. *Thurston County Planning Manager Michael Kain's Statement, October 7, 2002*.
38. At the time mining operations ceased in 1995 the LTD was subject to the provisions of the Thurston County Zoning Code, Section 20.54.040 and in particular subsection (4) of that ordinance. That ordinance which set time limits for the LTD stated:

"The authorization shall expire upon expiration of three (3) years from the date of final approval of a special use which by then has not commenced operation, or upon abandonment for a period of one (1) year of a special use that has been authorized . . ."

The previous owner expressed no intent of abandoning the operation and took measures to try and sell the operation. *Kain Statement, October 7, 2002.*

39. No intent of abandonment was ever shown by the previous owner or the Applicant. As noted in Mr. Kain's statement of October 7, 2002, the Applicant started up the mining operation immediately upon purchase.
40. Subsequent to the time that the property was purchased by the Applicant on January 25, 2000, TCC 25.54.040(4)(a) was amended to exclude the word "abandonment". The amended ordinance is not the standard for the review of this particular request.

CONCLUSIONS

Jurisdiction

The Hearing Examiner is granted jurisdiction to hear and decide applications for Special Use Permits for gravel mining pursuant to TCC 2.06.010 and TCC 20.54.015.

Criteria

The Hearing Examiner may approve an application for a Special Use Permit only if the specific standards set forth in TCC 20.54.070 and the following general standards set forth in TCC 20.54.040 are satisfied:

1. Plans, Regulations, Laws. The proposed use at the specified location shall comply with the Thurston County Comprehensive Plan and all applicable federal, state, regional, and Thurston County laws or plans.
2. Underlying Zoning District. The proposed use shall comply with the general purposes and intent of the applicable zoning district regulations and subarea plans. Open space, lot, setback and bulk requirements shall be no less than that specified for the zoning district in which the proposed use is located unless specifically provided otherwise in this chapter.
3. Location. No application for a special use shall be approved unless a specific finding is made that the proposed special use is appropriate in the location for which it is proposed. This finding shall be based on the following criteria:

- a. Impact. The proposed use shall not result in substantial or undue adverse effects on adjacent property, neighborhood character, natural environment, traffic conditions, parking, public property or facilities, or other matters affecting the public health, safety and welfare. However, if the proposed use is a public facility or utility deemed to be of overriding public benefit, and if measures are taken and conditions imposed to mitigate adverse effects to the extent reasonably possible, the permit may be granted even though the adverse effects may occur.
- b. Services. The use will be adequately served by and will not impose an undue burden on any of the improvements, facilities, utilities, or services existing or planned to serve the area.

4. Time Limits.

- d. Time Limit and Re-Review. Where the approval authority is the hearing examiner, there may be a condition to provide time limits for the use. If it is determined after review that the special use no longer meets the conditions set by the hearing examiner at the time of the initial approval, the use may be terminated, or such standards added as will achieve compliance with the original hearing examiner conditions.

Conclusions Based on Findings

Conclusions

The Conclusions based on Findings as set forth in the April 5, 2002 Decision are hereby incorporated and included as Conclusions for this proceeding. It should be noted that the references to Findings of Fact in Conclusions 1 through 10 of the April 5, 2002 "Decision refer to the Findings of Fact of the original Decision dated April 5, 2002.

I. Water

1. Based on the analysis of the impact to groundwater, aquifer and the Black River, water quality and quantity issues have been addressed. The maximum lowering of water levels at any well will be no greater than 1.7 feet and the mining will not affect water levels in Ashley Creek.
2. The soil conditions, including sand and gravel layers under the wetland and eastern boundary, as well as under Ashley Creek have been adequately reviewed. There is conclusive evidence on water quality and water drawdowns. The reaction of the aquifer and the information from the observations and pumping at PW-I have provided adequate information that the area will not negatively react to any aquifer stress.

3. The mining operation shall be subject to five year reviews, including analysis of the impact to groundwater to the site, aquifer and the Black River. This information will be provided in monitoring plans for this project and in the five-year review of the permit. The Applicants must devise water level monitoring parameters that will validate the predictions on the effects of groundwater. The monitoring plan must be approved by the Thurston County Department of Health before the expansion can occur. If during future five-year reviews, the actual effects of the project differ significantly from the predicted effects, the project must be modified to mitigate the effects. The project operators must agree before starting the expansion that if they are significantly out of compliance with the conditions of the approved monitoring plan at a future five-year review, the Health Department has the authority to close their operation.

II. Traffic

4. With the Hard Rock Mine Haul Road that was part of the Hard Rock Mine acquisition all new truck traffic generated by the expansion would not cause substantial or undue adverse effects on traffic conditions in the area.
5. Traffic data provided indicates that the level of service will not be impacted by the continued use of existing truck traffic on 88th Avenue SW. A 70-truck trip per day limit on 88th Avenue SW, supported by the Applicant and the County, is reasonable for its ability to carry traffic and not impact traffic flow. The "averaged" limit (as proposed by the Applicant) would be meaningless and difficult to enforce. The 70 truck trip per day cap recommended by the County is appropriate, and is necessary to ensure that actual traffic conditions are consistent with the assumptions of the Supplemental Traffic Analysis.
6. While the data provided supports the fact that 88th Avenue SW can carry the existing traffic it does not address the physical conditions of the Avenue that impacts traffic safety. *See Findings Nos. 25 and 26.* While the County has submitted that the existing rights to 88th Avenue SW cannot be taken away through the SUPT process needed improvements are in part the result of continued safety impacts created by the Applicant's vehicles. The Applicant will be required to participate in 88th Ave. improvements on a pro rata share.
7. The traffic impact on the adjoining properties and on the public in general was significantly reduced with the Applicant's purchase of the hard rock mine immediately south of the site and the easements of the permitted of the Hard Rock Haul Road. With all new truck traffic being channeled on the Hard Rock Haul Road increased impacts will not be significant. Level of service at the intersection of the Hard Rock Haul Road and the Littlerock Road SW are reasonable and the increased traffic can adequately use these roads and intersection.
8. Subject to condition F (below) 88th Avenue SW may only be used for existing traffic. The County's calculation of 70 truck trips per day is reasonable. This is a figure that should not be averaged, but should be limited to no more than 70 truck trips per day. Thus on no

day will the truck traffic exceed 70 truck trips per day, which means 35 trips in and 35 trips out.

9. With limitation of use on 88th Avenue SW and with the requirement that all new truck traffic use the Hard Rock Haul Road as an alternative access, safety and traffic issues are resolved.

III. Designation of Mineral Resources

10. The designation of mineral resources land of the subject property is confusing at best. While the designation of the entire 151-acre site has not been done, 26 acres has been designated as mineral resource land. The proposed 80 acres in the north, with the exception of the 26 acres, has not been designated. However the lack of designation does not automatically prohibit mineral extraction. *TCC 20.30(B).010* sets forth that nothing in the chapter shall be construed as prohibiting mineral extraction on nondesignated lands. In addition the Applicant would qualify as a mineral resource designation for the entire parcel pursuant to the requirements of *TCC 20.30(B).030(2)*.
11. It is recommended that all of the property be subject to designation as mineral resource lands and that the Applicant proceed through the County designation process.

IV. Vested Rights

12. There was no abandonment of the mining operations permitted by LTD-3-85 and the amended LTD-3-85. When the previous owner ceased the mining operations in 1996 there was no intent to abandon. As evidenced by his intent to sell and the eventual sale to the Applicant, who started up the operations immediately, the rights were vested with the original permits.

DECISION

Based upon the preceding Findings of Facts and Conclusions, the testimony and evidence submitted at the Public Hearing, and upon the impression of the Hearings Examiner at site views, it is hereby ORDERED that the Special Property Use Permit to expand an existing gravel mine, replace a concrete batch plant, construct a hot mix asphalt plant, and resume concrete and asphalt recycling, as depicted on project plans labeled as Exhibit 1 is **GRANTED**. The approval is granted subject to the following conditions:

- A. The approved permits LTD-3-85 and LTD-3-85 as amended remain in effect. Quality Rock Products must continue to comply with the conditions established in LTD-3-85 and LTD-3-85-Amendment, (Attachments i and j) except as amended below:

1. Condition I of both LTD-3-85 and LTD-3-85-Amendment shall be eliminated and replaced with a requirement for a 100-foot buffer around the perimeter of the 151-acre expansion area, as required in TCC 17.20.230. The 100-foot setback area shall not be used for any other use in conjunction with extraction except access streets, berms, fencing, landscaping, and signs. Any use in the 100 foot setback shall be reviewed by the Thurston County Department of Development Services.
- B. All requirements of the Thurston County Environmental Health Department comment letters (Attachments o and p of the November 19, 2001 staff report and Attachment b of this staff report (*exhibit 63*)) and the Thurston County Roads and Transportation Services memorandums ((*exhibit 63* Attachments l, m, and n) shall be satisfied prior to any mining activity occurring within the expansion area.
- C. The Applicant will be required to contribute a pro-rata share to the improvements at Littlerock Road and 93rd Avenue to install a right turn lane on northbound Littlerock Road.
- D. Comply with all conditions of the Mitigated Determination of Nonsignificance dated October 4, 2001 (Attachment h). None of the MDNS conditions shall be construed as authorizing activities that exceed the limits set forth in the Thurston County Mineral Extraction Code (TCC 17.20).
- E. The operation of the facilities on the site shall comply with Thurston County Mineral Extraction Code, TCC 17.20.
- F. The primary access to the project site for truck traffic shall be the Hard Rock Mine Haul Road. All truck traffic shall utilize the Hard Rock Mine Haul Road, except as specified below:
 - The use of 88th Avenue shall be allowed for up to 70 truck trips per day if the Applicant pays for a determined pro-rated share of the costs of the improvements needed for the Avenue. If the Applicant does not pay for the prorated shared of the costs of the improvements of 88th Ave, SW all traffic (existing and projected) must use the Hard Rock Mine Haul Road.
 - Truck trips on 88th Avenue shall be limited to a maximum count of 70 truck trips per day. A truck trip is defined as a truck either entering or leaving the site. Therefore, 70 truck trips is the equivalent of 35 trucks entering the site and 35 trucks exiting the site. Employees may continue to access the mine from 88th Avenue and are in addition to the maximum truck traffic.

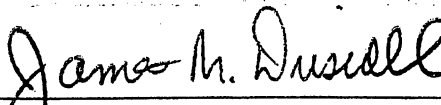
- All truck trips outside the hours of 7:00 a.m. to 7:00 p.m. Monday through Saturday, as allowed under TCC 17.20.115(C), shall use only the Hard Rock haul road.
- G. The speed limit for truck traffic on 88th Avenue shall be 25 miles per hour. Should there be more than three violations per calendar year from all of the Applicant's vehicles the Permit will be reviewed and possibly cancelled. The Applicant shall post this condition on site and shall inform all of its employees of it.
- H. The Special Use Permit shall be reviewed by the Hearing Examiner each five years after the effective date of the permit to determine whether the conditions of approval have been complied with or should be amended. The Applicant is responsible to ensure that such review has been completed within the five-year time period.
- I. The Applicant shall comply with all conditions of OAPCA Order of Approval for Notice of Construction 01NOC116 and any other applicable OAPCA regulations.
- J. The Applicant shall comply with all local, state, and federal permits and regulations.
- K. The Applicant shall obtain a Solid Waste Handling Permit prior to the recycling of asphalt and concrete.
- L. The Applicant shall submit a copy of the Washington State Department of Natural Resources approved reclamation plan to Thurston County Development Services prior to any mining activity within the expansion area.
- M. The floor of the excavation area shall be designed and maintained in such a manner that stormwater drainage will flow to the sedimentation pond to be retained on-site.
- N. For protection of surface and ground water, all turbid water and all stormwater shall be retained within the sedimentation pond as shown on the site plan.
- O. The Applicant shall require that noise levels shall comply with standards set forth in WAC 173-60-040. Noise levels shall be monitored at the property boundaries and at the easement boundary of the Burlington Northern (BN) right-of-way during normal operating hours and during both daytime and nighttime operating hours at least quarterly until the Health Department determines that such monitoring is not necessary, as required in TCC 17.20.110. Measured daytime noise levels shall not exceed the following levels, as established in WAC 173-60-040:
- | | |
|--|--------|
| Adjacent to Hard Rock Mine property | 60 dBA |
| Adjacent to all other property lines and BN right-of-way | 55 dBA |

Between 10:00 p.m. and 7:00 a.m., all measured noise levels shall be 10 dBA *lower* than the levels stated above. If noise monitoring noise levels along any property line exceed the permitted levels in WAC 173-60-040, the Applicant shall be required to mitigate with berms or other approved methods. The type of mitigation shall be determined by the Thurston County Department of Developmental Services.

- P. A twenty-foot high noise berm shall be installed along the eastern portion of the property. The noise berm shall extend to the south property line, shall be located outside the wetland buffers, and shall run parallel to the west side of the Burlington Northern Railroad easement that cuts across the southeast corner of the property. The berms may be located within the required 100-foot setback and shall be landscaped to prevent erosion.
- Q. All equipment used on the site shall be equipped with mufflers and be properly maintained to limit noise.
- R. All loaders and dozers shall be equipped with ambient-sensitive back-up alarms due to the site's proximity to residential zoned properties and residential uses.
- S. All development on the site shall be in substantial compliance with the approved site plan. Any expansion or alteration of this use will require approval of a new or amended Special Use Permit. The Development Services Department will determine if any proposed amendment is substantial enough to require Hearing Examiner approval.
- T. The Applicant shall maintain a daily record of truck trips that documents how many trucks use 88th Avenue and how many trucks use the Hard Rock Mine haul road. This daily record shall be made available to Thurston County staff on request.
- U. The Applicant shall obtain any required easements from Thurston County Parks Department prior to using the Hard Rock haul road for mining activities.
- V. The last three phases of the operation shall be subject to further review including detailed analysis of the impact of the groundwater to the site, the aquifer, and the Black River. In designing the monitoring plan for this project, the Applicants must devise water level monitoring parameters that will validate the predictions of the affects on groundwater. As stated previously this monitoring plan must be approved by the Health Department before the expansion can proceed. If during future five-year reviews the actual effects of this project differ significantly from the predicted effects, the project must be modified to mitigate the effects. The project operators must agree before starting the expansion that if they are significantly out of compliance with the conditions of the approved monitoring plan at a future five-year review, the Health Department clearly has authority to close their operation."

- W. Mining operations shall be limited to the production feasible with a maximum well pumpage of 5,000 gallons per day unless a Department of Ecology water right is obtained and submitted to Thurston County. Based on the best available information at hand, that maximum production is 700 tons per day. In the alternative the Applicant may get approval from the Department of Ecology for a written plan that shows how all combined water uses can be held below 5,000 gallons per day. A copy of that plan shall also be submitted to Thurston County for review.
- X. All wells on site shall be equipped with cumulative flow measuring devises. Measurements shall be taken weekly, and the data shall be submitted to Thurston County quarterly.

DATED this 30th day of May, 2003.



James M. Driscoll
Hearings Examiner

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*Findings, Conclusions & Decision on Remand
Quality Rock Products, Inc.*

Page 24 of 24

050

Case 1 01-000765 Case Nat Quarry Rock
☐ Check here for: RECONSIDERATION OF HEARING EXAMINER DECISION

THE APPELLANT, after review of the terms and conditions of the Hearing Examiner's decision hereby requests that the Hearing Examiner take the following information into consideration and further review under the provisions of Chapter 2.06.060 of the Thurston County Code:

(If more space is required, please attach additional sheet.)

☐ Check here for: APPEAL OF HEARING EXAMINER DECISION

TO THE BOARD OF THURSTON COUNTY COMMISSIONERS COMES NOW _____ on this _____ day of _____, 2003, as an APPELLANT in the matter of a Hearing Examiner's decision rendered on _____, 2003, by _____ relating to _____.

THE APPELLANT, after review and consideration of the reasons given by the Hearing Examiner for his decision, does now, under the provisions of Chapter 2.06.070 of the Thurston County Code, give written notice of APPEAL to the Board of Thurston County Commissioners of said decision and alleges the following errors in said Hearing Examiner decision:

Specific section, paragraph and page of regulation allegedly interpreted erroneously by Hearing Examiner:

1. Zoning Ordinance _____
2. Platting and Subdivision Ordinance _____
3. Comprehensive Plan _____
4. Critical Areas Ordinance _____
5. Shoreline Master Program _____
6. Other: _____

(If more space is required, please attach additional sheet.)

AND FURTHERMORE, requests that the Board of Thurston County Commissioners, having responsibility for final review of such decisions will upon review of the record of the matters and the allegations contained in this appeal, find in favor of the appellant and reverse the Hearing Examiner decision.

STANDING

On a separate sheet, explain why the appellant should be considered an aggrieved party and why standing should be granted to the appellant. This is required for both Reconsiderations and Appeals.

Signature required for both Reconsideration and Appeal Requests

APPELLANT NAME PRINTED _____

SIGNATURE OF APPELLANT _____

Address _____

Phone _____

Please do not write below - for Staff Use Only:

Fee of ☐ \$250.00 for Reconsideration or ☐ \$485.00 for Appeal Received (check box): Initial _____ Receipt No. _____
Filed with the Development Services Department this _____ day of _____, 2003.

THURSTON COUNTY
**PROCEDURE FOR RECONSIDERATION AND APPEAL
OF HEARING EXAMINER DECISION TO THE BOARD**

NOTE: THERE MAY BE NO EX PARTE (ONE-SIDED) CONTACT OUTSIDE A PUBLIC HEARING WITH EITHER THE HEARING EXAMINER OR WITH THE BOARD OF THURSTON COUNTY COMMISSIONERS ON APPEALS (Thurston County Code, Section 2.06.030).

If you do not agree with the decision of the Hearing Examiner, there are two (2) ways to seek review of the decision. They are described in A and B below. Unless reconsidered or appealed, decisions of the Hearing Examiner become final on the 15th day after the date of the decision.* The Hearing Examiner renders decisions within five (5) working days following a request for reconsideration unless a longer period is mutually agreed to by the Hearing Examiner, applicant, and requester.

A. RECONSIDERATION BY THE HEARING EXAMINER

1. Any aggrieved person or agency who disagrees with the decision of the Examiner may request reconsideration. All reconsideration requests must include a legal citation and reason for the request. The Examiner shall have the discretion to either deny the motion without comment or to provide additional Findings and Conclusions based on the record.
2. Written request for reconsideration and the appropriate fee must be filed with the Development Services Department **within ten (10) days of the written decision**. The form is provided for this purpose on the opposite side of this notification.

B. APPEAL TO THE BOARD OF THURSTON COUNTY COMMISSIONERS

1. Appeals may be filed by any aggrieved person or agency directly affected by the Examiner's decision. The form is provided for this purpose on the opposite side of this notification.
2. Written notice of appeal and the appropriate fee must be filed with the Development Services Department **within fourteen (14) days of the date of the Examiner's written decision**. The form is provided for this purpose on the opposite side of this notification.
3. An appeal filed within the specified time period will stay the effective date of the Examiner's decision until it is adjudicated by the Board of Thurston County Commissioners or is withdrawn.
4. The notice of appeal shall concisely specify the error or issue which the Board is asked to consider on appeal, and shall cite by reference to section, paragraph and page, the provisions of law which are alleged to have been violated. Issues which are not so identified need not be considered by the Board. The notice may be accompanied by a written memorandum which the appellant may wish considered by the Board. The memorandum shall not include the presentation of new evidence and shall be based only upon facts presented to the Examiner.
5. Notices of the appeal hearing will be mailed to all parties of record who legibly provided a mailing address. This would include all persons who (a) gave oral or written comments to the Examiner or (b) listed their name as a person wishing to receive a copy of the decision on a sign-up sheet made available during the Examiner's hearing.
6. Unless all parties of record are given notice of a trip by the Board of Thurston County Commissioners to view the subject site, no one other than County staff may accompany the Board members during the site visit.

C. STANDING All reconsideration and appeal requests must clearly state why the appellant is an "aggrieved" party and demonstrate that standing in the reconsideration or appeal should be granted.

D. FILING FEES AND DEADLINE If you wish to request a reconsideration or appeal this determination, please do so in writing on the back of this form, accompanied by a nonrefundable fee of **\$250.00** (for a request for reconsideration) or **\$485.00** (for an appeal). Any request for reconsideration or appeal must be received in the Permit Assistance Center on the second floor of Building #1 in the Thurston County Courthouse complex no later than 5:00 p.m. on June 13, 2003 (14 days for an appeal) or June 9, 2003 (10 days for a reconsideration). Postmarks are not acceptable. If your application fee as well as completed application form is not filed by this time, you will be unable to request a reconsideration or appeal determination. This deadline may not be extended.

* Shoreline Permit decisions are not final until a 21-day appeal period to the state has elapsed following the date the County decision becomes final.



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Diane Oberquell
District Two
Kevin J. O'Sullivan
District Three

ORIGINAL HEARING EXAMINER

BEFORE THE HEARING EXAMINER FOR THURSTON COUNTY

In the Matter of the Appeal of)
)
Quality Rock Products, Inc.) FILE NO. SUPT 000788
)
For Approval of a Special Use Permit.) FINDINGS, CONCLUSIONS
) AND DECISION
)

SUMMARY OF DECISION

The request for approval of a Special Use Permit for the expansion of an existing gravel mine and the establishment of associated accessory uses at 4711 – 88th Avenue Southwest is **GRANTED**, with conditions. The request for a setback reduction is **DENIED**.

SUMMARY OF REQUEST

Quality Rock Products, Inc. (Applicant) requested approval of a Special Use Permit (SUP) for the expansion of an existing gravel mine on property located generally at 4711 – 88th Avenue Southwest in Thurston County, Washington. The request is to allow the Applicant to expand the existing 26-acre mining site to 151 acres; to replace a previously approved concrete batch plant; to construct an asphalt hot mixing plant; and to resume concrete and asphalt recycling.

A hearing on the request was held before the Hearing Examiner of Thurston County on November 19, 2001, December 10, 2001, February 5, 2002 and February 11, 2002. At the hearing the following presented testimony and evidence:

Nancy Pritchett, Thurston County Development Services
David Ward, Applicant Representative
Laura VanDyke
Danial Bruck
Carole Willey
Michelle Blanhard
Nina Carter
Fayette Krause

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DATE: 4/5/02 CS

Jerry Long
Mary Ann Veria
Mike Kain, Thurston County Development Services
Gwen Atkinson
Tina Peterson
Chris Rhodes
Charlie Isaacson
Kent Hauvre
Jerry Dierker
Jean Takekawa
Joe Simmons
Paul Holm
Mary Ingalls
Ed Rauser
Sanoma Jefferson
Greg Jenkins
Jim Likes
Robert Sand
Heath Packard
Jay Kobilansky
Sue Danver
Shirley Olson
Ann Smith
Carol Serdar
Gordon Boe
Donald Houston
Roger Kellum
Lori Tiedt
Richard T.
George Bennett
Roy Garrison
Ioana Park
Tim Sonnichsen
Ed Rauser
Randy DeAtley
Steve Johnson, Thurston County Roads & Transportation Services
John Ward, Thurston County Environmental Health
Nadine Romero
Jay Roach
Mark Hayes
Robert Mead, Thurston County Water and Waste Management
George Bennett

At the hearing the following exhibits were submitted and were admitted as part of the official record:

EXHIBIT 1 Development Services Department Staff Report

Attachment a	Notice of Public Hearing
Attachment b	Special Use Permit Application
Attachment c	Vicinity Map
Attachment d	Site Plans Illustrating Existing Conditions, Phases of Mining, Final Reclamation Plan
Attachment e	Geologic Vicinity Map with Existing Well Locations
Attachment f	Hydrogeological Cross Section and Hydrogeological Impacts Cross Section
Attachment g	Wetland Delineation Map
Attachment h	Mitigated Determination of Nonsignificance, issued October 4, 2001
Attachment i	Hearing Examiner Findings, Conclusions, and Decision of LTD-3-85 issued August 22, 1985
Attachment j	Hearing Examiner Findings, Conclusions, and Decision of LTD-3-85-Amendment issued July 7, 1986
Attachment k	August 3, 2001 Letter from SubTerra Inc.
Attachment l	October 4, 2001 Memorandum from Roads and Transportation Services
Attachment m	October 1, 2001 Memorandum from Roads and Transportation Services
Attachment n	June 21, 2001 Memorandum from Roads and Transportation Services
Attachment o	October 31, 2001 Letter from the Public Health and Social Services Department

Attachment p	January 5, 2001 Letter from the Public Health and Social Services Department
Attachment q	July 12, 2001 Letter from Washington State Department of Natural Resources
Attachment r	August 20, 2001 Letter from Washington State Department of Natural Resources
Attachment s	May 17, 2001 Letter of Agreement between Quality Rock Products and Bonneville Power Administration
Attachment t	OAPCA Notice of Construction Preliminary Determination dated May 21, 2001
Attachment u	<p>Public Comment Letters</p> <ol style="list-style-type: none"> 1. Letter from Darby and Leona Vixo dated October 24, 2001 2. Letter from Fayette F. Krause dated October 12, 2001 3. Letter from Paul Bakke dated September 10, 2001 4. Letter from Gordon Boe dated September 12, 2001 5. Letter from Gordon Boe and Myron Struck dated January 3, 2001 6. Letter from Sarah Skidmore and Rich Zeldenrust dated February 8, 2001 7. Letter from Harry Woodward dated January 4, 2001 8. Letter from Dr. & Mrs. Robert F. Sand dated January 3, 2001 9. Letter from P.W. Chapman dated January 2, 2001 10. Letter from Donald W. Huston dated December 26, 2001 11. Letter from Jean E. Takekawa dated January 8, 2001 12. Letter from Tony McNamara dated January 2, 2001 13. Letter from Ed and Deanna Rauser dated January 4, 2001 14. Letter from Pat McNamara dated January 6, 2001 15. Letter from Fayette F. Krause dated January 3, 2001 16. Letter from Mary Ann Veria dated May 26, 2001 17. Email from Shirley D. Olson dated July 8, 2001 18. Letter from Citizen, Neighbor to the Site, and Taxpayer 19. Letter from Shanna Diehl 20. Letter from Justin DeVries 21. Letter from Riger Kellam 22. Letter from David White 23. Letter from Tom Hoover 24. Letter from David Poston 25. Letter from Ardith Lowery 26. Letter from Richard Hall 27. Letter from Dale Smith

28. Letter from Shanna Diehl
29. Letter from Leland Bloom
30. Letter from Harriet Ferris
31. Letter from Mark Peryea
32. Letter from Stanley Badger
33. Letter from Evonne Peryea
34. Letter from Jalyne Lupo
35. Letter from Tamar Hathcock
36. Letter from Shon Hathcock
37. Letter from Linda Johnigh
38. Letter from Ron Skowronek
39. Letter from Danella Thompson
40. Letter from Rod Lypo
41. Letter from Carol Badger
42. Letter from David Chamberlin
43. Letter from Mary McGuire
44. Letter from Lina Jo Johnson
45. Letter from Kerry Chamberlin
46. Letter from Sussan Monroe
47. Letter from Rick Baldwin
48. Letter from Carolyn Johnson
49. Letter from Karen Clardy
50. Letter from Teresa Coley
51. Letter from Marion Smith and Maxine Smith
52. Letter from Patricia Gardner
53. Letter from David Gardner
54. Letter from Devon Emmons
55. Letter from Robert Breselow
56. Letter from Sanoma Jefferson
57. Letter from Marilyn Seed
58. Letter from James Seed
59. Letter from Greg and Debbie Anderson
60. Letter from Michelle and Shane Chapman
61. Letter from Vince Mitchell
62. Letter from Robert Freeman
63. Letter from Tina Freeman
64. Letter from Jessica Muth
65. Letter from Scott Feldtman
66. Letter from Jennifer Feldtman
67. Letter from Heath G. Packard, Black Hills Audubon Society dated October 18, 2001
68. Letter from Ed and Deanna Rauser dated October 19, 2001
69. Letter from Kari Rokstad, Department of Ecology, dated October 17, 2001

70. Letter from Carol Serdar, Department of Natural Resources, dated October 15, 2001
71. Letter from John Williams dated October 18, 2001
72. Letter from Fayette F. Kruse dated October 12, 2001
73. Letter from Don and Mary Ingalls dated October 15, 2001

EXHIBIT 2 Traffic Impact Analysis dated July 13, 2000

EXHIBIT 3 Written Testimony of Fayette F. Krause dated November 16, 2001

EXHIBIT 4 Written Testimony of Jerry Long with the following attachments: a) Sometimes Things Go Wrong; b) Excerpt from Hot-Mix Magazine Titled "Emissions;" and c) Miscellaneous Articles printed from the Internet

EXHIBIT 5 Written Testimony of Jean Takekawa, Nisqually National Wildlife Refuge, dated November 16, 2001 with attached Aerial of Proposed Asphalt Plant in relation to Refuge Boundary and Map of Phase 5 Excavation Plan

EXHIBIT 6 Written Testimony of Joe Simmonds dated November 18, 2001 and Petition List of Neighbors Opposed to the Project

EXHIBIT 7 Large Aerial Photograph of Project Site

EXHIBIT 8 Public Comment Letters

1. Letter from Sarah Broderick dated November 19, 2001
2. Email from Brenda Johnson dated November 15, 2001
3. Email from Ron Benson dated November 15, 2001
4. Email from Margaret Rader dated November 15, 2001
5. Email from Lisa Noble dated November 15, 2001
6. Email from Donna and William Royslance dated November 15, 2001
7. Email from Michael Ralston dated November 15, 2001
8. Email from Rick Schmidtke dated November 15, 2001
9. Email from Robert S. Cole dated November 16, 2001
10. Email from Krag Unsoeld dated November 16, 2001
11. Email from Tina Peterson dated November 16, 2001
12. Email from Keith Cotton dated November 15, 2001
13. Email from Mark Gray dated November 15, 2001
14. Email from Kathryn McLeod dated November 15, 2001
15. Letter from Robert W. Schanz, Chehalis River Council, dated October 17, 2001
16. Letter from Arnold and Shirley Olson dated November 14, 2001
17. Email from Shon Hathcock dated November 14, 2001
18. Email from Tamar Hathcock dated November 14, 2001
19. Letter from Robert Metzger dated November 13, 2001

20. Letter from Sarah Skidmore and Rich Zeldenrust dated November 14, 2001
21. Letter from Devon Emmons dated November 10, 2001
22. Letter from Citizen, Neighbor, and Taxpayer
23. Email from Andrew Hendricks dated November 15, 2001
24. Letter from Tamar Hathcock dated November 14, 2001
25. Letter from Shon Hathcock dated November 14, 2001
26. Email from Margaret Holm Rader dated November 15, 2001
27. Letter from Jean MacGregor
28. Letter from Beth Doglio, Black Hills Audubon Board dated November 15, 2001
29. Letter from Chris Hawkins, South Sound Greens, dated November 16, 2001
30. Email from Anonymous Person dated November 16, 2001
31. Letter from Zena H.
32. Email from Christopher Ellings dated November 16, 2001
33. Email from Karin Kraft dated November 16, 2001
34. Email from Jill Wasberg dated November 16, 2001
35. Email from Annie Szvetcz dated November 16, 2001
36. Email from Theresa Nation dated November 16, 2001
37. Email from Carolyn Trefts dated November 16, 2001
38. Email from Sue Sikora dated November 16, 2001
39. Email from Michelle Guerin dated November 16, 2001
40. Email from Annette S. Bristol dated November 16, 2001
41. Letter from William Vogel dated November 16, 2001
42. Email from Todd Wilson dated November 16, 2001
43. Email from Cathy Reynolds dated November 16, 2001
44. Email from Jay Kelly dated November 16, 2001
45. Email from Cathy and Jim Reynolds dated November 16, 2001
46. Email from Max Beauman dated November 16, 2001
47. Email from Peggy Bruton dated November 16, 2001
48. Email from Clint Burelson dated November 16, 2001
49. Email from Darlene Schanfald dated November 16, 2001
50. Email from Anita Christensen dated November 18, 2001
51. Email from Carey and Pamela Rader dated November 18, 2001
52. Letter from Dr. Robert and Maria Sand dated November 16, 2001
53. Letter from Heath Packard, Black Hills Audubon Society dated November 19, 2001
54. Letter from Lisa M. Godina dated November 19, 2001
55. Letter from Sue Danver dated November 19, 2001
56. Letter from Michelle and Shane Chapman dated November 19, 2001

EXHIBIT 9 Map of Black Lake Hills Wildlife Area

- EXHIBIT 10 Written Testimony of Sue Danver dated November 19, 2001 with the following attachments: a) Chemical Injury Information Network Appendixes A-H; b) Excerpt from Environmental Toxicology and Chemistry, Vol. 18, No. 3, titled "Sensitivity of Fish Embryos to Weathered Crude Oil" Part 1 and 2; c) Marine Ecology Progress Series (reprint); d) Article Titled "Changing Perspectives on Oil Toxicity Evaluation; d) Two Excerpts from Environmental Toxicology and Chemistry, Vol. 18, No. 7 and 8; e) Oil and Gas Issues in Alaska; f) The Precautionary Principle in Environmental Science; and g) Ascites, Premature Emergence, Increased Gonadal Cell Apoptosis, and Cytochrome P4501A Introduction in Pink Salmon Larvae Continuously Exposed to Oil-Contaminated Gravel During Development
- EXHIBIT 11 October 15, 2001 Letter to Gordon Boe from John Libbey, Thurston County Environmental Health
- EXHIBIT 12 Written Testimony of Heath Packard, Black Hills Audubon Society dated November 19, 2001
- EXHIBIT 13 Public Comment Letters from William Shelmerdine dated November 19, 2001 and Susan Danver dated November 19, 2001
- EXHIBIT 14 Public Comment Letter from Donald W. Houston dated November 16, 2001
- EXHIBIT 15 Technical Data of Applicant with Appendixes A-E
- EXHIBIT 16 Wetland Buffer Enhancement Plan dated October 20, 2000
- EXHIBIT 17 April 27, 2001 Letter to Janet Ramsey from Tim Sonnichesen, Sonnichesen Engineering, LLC regarding Air Quality Modeling Using SCREEN 3 Procedures
- EXHIBIT 18 Notice of Construction Preliminary Determination dated May 21, 2001 - prepared by Olympic Air Pollution Control Authority
- EXHIBIT 19 Olympic Air Pollution Control Authority Board of Directors Meeting Notes of July 11, 2001
- EXHIBIT 20 Application for Reclamation Permit
- EXHIBIT 21 June 19, 2001 Letter to Steve Johnson, Thurston County Roads and Transportation Services from George H. Bennett, SubTerra, Inc. regarding Updated Stormwater Drainage Plan
- EXHIBIT 22 November 16, 2000 Letter to Dave Hurn, Thurston County Development Services from George Bennett, SubTerra Inc.

- EXHIBIT 23 Littlerock Sand and Gravel Operation Slope Stability Analysis dated October 2001 - prepared by SubTerra, Inc.
- EXHIBIT 24 10 Before and After Photographs of the Littlerock Project
- EXHIBIT 25 Report on the Soils, Geology, and Ground Water dated July 2000
- EXHIBIT 26 Second Aerial Photograph of Project Site
- EXHIBIT 27 December 27, 2001 Order to Rectify Deficiencies; October 22, 2001 Amendment for Surface Mine Reclamation Permit; June 5, 2001 Letter of Correction, and July 12, 2001 Order to Rectify Deficiencies all from Carol Serdar, Department of Natural Resources
- EXHIBIT 28 December 9, 2001 Public Comment Letter from Robert Metzger
- EXHIBIT 29 May 4, 2001 Letter to Dave Hurn, Thurston County Development Services from George Bennett regarding Response to Nancy Pritchett February 2, 2001 Memorandum
- EXHIBIT 30 Public Comment Letters
1. Letter from Gwen Atkinson dated December 14, 2001
 2. Email from Stephen R. Klein dated December 13, 2001
 3. Email from Susan Baker dated December 13, 2001
 4. Email from Don A. Williams dated December 12, 2001
 5. Email from Cheryl Mongovin dated December 12, 2001
 6. Letter from Devon Emmons dated December 11, 2001
 7. Letter from Mary Ann Veria dated December 12, 2001
 8. Letter from Bruce and Ann Smith dated December 9, 2001
 9. Letter from Richard Tardiff dated December 13, 2001
 10. Email from Monica Mestas dated December 14, 2001
 11. Letter from Donald and Donna Huston dated December 12, 2001
 12. Email from Virginia Sand Balius dated December 14, 2001
 13. Email from Paul T. Holm dated December 14, 2001
 14. Email from Clarence Elstad dated December 14, 2001
 15. Email from Michael R. Balius dated December 14, 2001
 16. Email from Abraham Ringel dated December 15, 2001
 17. Email from Leslie H. Romer dated December 15, 2001
 18. Email from Anne Hankins dated December 15, 2001
 19. Email from John Daly dated December 16, 2001
 20. Letter from Robert Metzger dated December 16, 2001
 21. Letter from John W. Hunter dated December 13, 2001
 22. Letter from Donald and Donna Huston dated November 15, 2001
 23. Letter from Don Grower submitted December 17, 2001
 24. Letter from Jerry Lee Dierker Jr. dated December 16, 2001

25. Letter from Darby and Leah Vixo dated December 14, 2001
26. Letter from Dolores Sand submitted December 17, 2001
27. Letter from Jeff Cederholm dated December 17, 2001
28. Email from Richard Curtis dated December 17, 2001
29. Email from Kevin Ryan dated December 17, 2001
30. Email from Whittier Johnson dated December 17, 2001
31. Email from Annette S. Bristol dated December 17, 2001
32. Email from Gary Wiles and Jan Sharkey dated December 17, 2001
33. Letter from Thomas O. Skjervold dated December 17, 2001
34. Email from Gretchen Callison dated December 17, 2001
35. Email from Mark Bergeson dated December 17, 2001
36. Email from Ben Kinkade dated December 17, 2001
37. Email from Linda Newman dated December 17, 2001
38. Letter with Attachments A-H from Heath G. Packard and Sue Danver dated December 17, 2001 and titled "Black Hills Audubon Society Land Use Hearing Written Testimony for Quality Rock Products, SUPT 000788"
39. Letter with Attachments A-G from Heath G. Packard and Sue Danver dated December 17, 2001 and titled "Black Hills Audubon Society SEPA Withdrawal Request and Expert Testimony"

- EXHIBIT 31 County's Response Memorandum from Cynthia Wilson, Thurston County Development Services dated January 9, 2002 with attached Letter from Debbie D. Carnevali, Washington State Department of Fish and Wildlife dated January 3, 2002
- EXHIBIT 32 Applicant's Response Letter with Attachments from David Ward, Landerholm, Memovich, Lansverk & Whitesides, P.S. dated January 8, 2002
- EXHIBIT 33 February 1, 2002 Memorandum from Robert Mead, Public Health and Social Services regarding Quality Rock Background Information
- EXHIBIT 34 January 30, 2002 Habitat Evaluation for the Oregon Spotted Frog and Olympic Mudminnow at the Quality Rock Products, Inc. Little Rock Surface Mine
- EXHIBIT 35 No Exhibit
- EXHIBIT 36 Applicant's Brief on Wetland and Habitat Issues
- EXHIBIT 37 Resume of Nadine Louise Romero, Hydrogeologist/Geochemist
- EXHIBIT 38 Review of the Hydrogeologic Report for the Quality Rock Products Sand and Gravel Mine Expansion prepared by Nadine L. Romero dated February 4, 2002

- EXHIBIT 39 January 31, 2002 Letter from Carol Serdar, Washington State Department of Natural Resources regarding Documentation and Clarification of Items Observed during January 23, 2002 Site Visit to Quality Rock "Littlerock Pit"
- EXHIBIT 40 No Exhibit
- EXHIBIT 41 Photographs of Salmon in Ashley Creek dated December 25, 2001 and Photographs of the Berm
- EXHIBIT 42 Video Tape of Salmon in Ashley Creek dated December 22, 2001
- EXHIBIT 43 February 5, 2002 Written Opinion of Robert Metzger relating to Salmon and Hydrology Issues
- EXHIBIT 44 Public Comment Letter from Carla Jonientz dated February 5, 2002
- EXHIBIT 45 Public Comment Letter from Rich Kalman dated February 5, 2002
- EXHIBIT 46 Public Comment Letter from Ann Rockway dated February 4, 2002
- EXHIBIT 47 Public Comment Letter from Richard Curtis dated February 5, 2002
- EXHIBIT 48 Public Comment Letter from Robert and Carolyn Bureson dated February 5, 2002
- EXHIBIT 49 Public Comment Letter from Henry Romer dated February 3, 2002
- EXHIBIT 50 Public Comment Letter from Frank Chestnut
- EXHIBIT 51 February 8, 2002 Letter from Chris Chappell, Department of Natural Resources regarding Mitigated Determination of Nonsignificance
- EXHIBIT 52 Outline/Summary Testimony of Jerry Dierker
- EXHIBIT 53 Public Comment Letter from Gretchen Callison dated February 5, 2002
- EXHIBIT 54 June 17, 1986 Letter from Art Starry, Thurston County Health Department regarding Fairview Sand and Gravel LTD 3-86
- EXHIBIT 55 January 24, 2002 Letter from Mace G. Barron regarding Evaluation of Quality Rock Products Response to "Assessment of Potential Environmental Harm from the Proposed Quality Rock Facility"
- EXHIBIT 56 Clarification of the Location and Condition of Ashley Ditch with attached Map submitted by Donald Huston

- EXHIBIT 57 Mark Hayes Analysis of the "Habitat Evaluation for the Oregon Spotted Frog and Olympic Mudminnow at the Quality Rock Products, Inc. Little Rock Surface Mine" Report prepared by Ecological Land Services, Inc.
- EXHIBIT 58 January 18, 2002 Letter from John Peach, Department of Ecology regarding the December 17, 2001 Inspection Report
- EXHIBIT 59 1995 Report prepared by Robert Mead titled "The Direct and Cumulative Effects of Gravel Mining on Ground Water Within Thurston County, Washington"
- EXHIBIT 60 Table A1. Well, Spring, and Outcrop Records for the Study Area submitted by Robert Mead
- EXHIBIT 61 February 7, 2002 Response to Testimony regarding Onsite Hydrology Special Use Permit Application prepared by George H. Bennett, SUBTERRA, INC.
- EXHIBIT 62 Washington State Department of Fish and Wildlife Species Status Search Results for the Oregon Spotted Frog, Olympic Mudminnow, Coho Salmon, and Coastal Cutthroat

Based upon the testimony and evidence submitted at the open record hearing, and upon the impressions of the Hearing Examiner at a site view, the Hearing Examiner makes the following Findings of Fact:

FINDINGS OF FACT

1. The Applicant requested approval of a SUP for expansion of the mining operation at 4741 – 885th Avenue Southwest, Thurston County, Washington. It is the intent of the Applicant to expand the existing gravel mine (LTD-3-85) on site from 26 acres to 151 acres; to replace a previously approved batch plant (LTD-3-85, Amendment); to add an asphalt hot mixing plant; and to resume concrete and asphalt recycling. *Exhibit 1, page 1; Exhibit 1, Attachments b, I, and j.*
2. The entire parcel is 151 acres and is zoned Rural Residential/Resource – One Dwelling Unit Per Five Acres (RRR 1/5). In this zone, mineral extraction is allowed upon the approval of a Special Use Permit. In review of the Special Use Permit, the general standards as set forth in TCC 20.54.040 and the specific standards set forth in TCC 20.54.070 are considered. *Exhibit 1, Staff Report; Pritchett Testimony.*
3. In the Thurston County Comprehensive Plan, at least a portion of the site is designated a Mineral Resource Land of Long-Term Commercial Significance.¹ This designation

¹ The County's statement on page 5 of the Staff Report (Exhibit 1) that the entire 151-acre parcel carries the Mineral Resource Lands of Long-Term Commercial Significance designation is not supported by map M-43 of the

affords special protection to mineral extraction activities; however, a Special Use Permit is still required. All permits are subject to review by the Washington State Department of Natural Resources (DNR) and approval of a reclamation plan for the site. *Exhibit 1, Staff Report; Pritchett Testimony.*

4. In 1985, the Applicant's predecessor, Fairview Sand and Gravel Company, received approval of a Limited Use Permit to extract minerals from a 26-acre portion of the site and to operate a portable crusher/classifier. In 1986, the Limited Use Permit was amended to allow the addition of a dry cement batch plant. The batch plant use was discontinued several years ago (the exact date is unknown). In January of 2000, the Applicant purchased the site and now seeks to expand the mining operation to the entire 151-acre parcel and to resume use of the concrete batch plant. The County considers the 1986 Limited Use Permit amendment to still be valid for use of the concrete batch plant.² *Exhibit 1, page 2; Exhibit 1, Attachments i and j.*
5. The 151-acre parcel is located west of Little Rock Road at the end of 88th Avenue Southwest and east of the Black River in unincorporated Thurston County. Attached hereto is Exhibit 1, Attachment c, which gives a general overview of the project location. Also attached hereto, is a reduced copy of a map depicting existing site conditions (Exhibit 1, Attachment d). On the map, the location of existing equipment and stockpiles are designated as well as the location of the Bonneville Administration power line running through the property, the adjoining Burlington-Northern Railroad right-of-way; and the El Paso natural gas line. *Exhibit 1, Staff Report; Exhibit 1, Attachments c and d.*
6. The subject property is a gently rolling glacial upland that is on the east side of the Black River Valley. The elevation of the site ranges from 160 feet at the northeastern corner to 230 feet in the southwestern corner of the property. The mining activity that has occurred since 1985 has scarred a 26-acre portion of the 151-acre site. The proposed expansion area has been logged and is basically clear with the exception of some scotch broom, an

Comprehensive Plan, which designates only 80 acres of the site. However, it is not clear whether the original Comprehensive Plan designation has since been amended to include the entire parcel. Both the County and the Applicant provided written testimony/argument that the entire parcel carries the designation. *Exhibit 1, pages 5 and 9; Applicant's Closing Memorandum.*

² One of the criteria referenced in the 1986 permit specifies that approval of the dry cement batch plant would expire upon abandonment for one year. In the context of nonconforming uses, abandonment requires "an intention to abandon; and (b) an overt act, or failure to act, which carries the implication that the owner does not claim or retain any interest in the right to the nonconforming use." *Id., Andrew v. King County*, 21 Wn.App. 566, 572 (1978). The showing of intent is required even when the zoning code deems a use abandoned after a specified period of time. *Andrew*, 21 Wn.App. at 572; *King County v. High*, 36 Wn.2d 580, 582 (1950). Although the abandonment of a nonconforming use may not be entirely analogous to the abandonment of a use authorized by a Special Use Permit, the cases suggest that the Hearing Examiner could not make a decision on the validity of the 1986 permit without additional testimony and evidence on the issue. Moreover, because the County defined the Hearing Examiner's jurisdiction as excluding review of the concrete batch plant, no formal appeal of the County's determination was filed, and no testimony or evidence was taken on the abandonment issue (the Audubon Society raises the issue only in its closing brief), the Hearing Examiner does not have jurisdiction to review the validity of the permit. The Hearing Examiner must defer to the County's interpretation that the permit is still valid.

invasive, non-native species. There are wetlands associated with the Black River that are off-site and northwest of the property. The Black River is considered to be one of the last large, intact riparian systems in the Puget Sound area, and the U.S. Fish & Wildlife Service (USFW) is actively acquiring properties along portions of the Black River to preserve the existing wetland system and the habitat for migratory birds and fish and other species. The authorized boundary of the Black River Refuge, managed by USFW at Nisqually National Wildlife Refuge, surrounds the subject property on three sides (north, south and west). There are 3,800 acres of land within the boundary. To date, approximately 800 acres have been acquired by USFW. The former Hard Rock Mining Company site, directly west of the site, is under a purchase and sale agreement with USFW to be incorporated into the Refuge. *Exhibit 1, Staff Report; Exhibit 1, Attachment u-15; Exhibit 5; Pritchett Testimony; Bennett Testimony.* Members of the Black Hills Audubon Society and others describe the Black River area as peaceful, pristine, and valuable for canoeing, bird watching and observing wildlife. *Exhibit 13; Exhibit 8-37.*

7. Pursuant to the State Environmental Policy Act (SEPA), Thurston County was designated as the lead agency for review of environmental impacts resulting from the proposed development. On October 4, 2001, the County issued a Mitigated Determination of Nonsignificance (MDNS). Although comment letters were filed, no appeals were filed and the MDNS became final on October 25, 2001. *Exhibit 1, Attachment h.*
8. It is the intent of the Applicant to expand the mining operation on-site. The expansion would occur in several phases. The first three phases would consist of excavation above the groundwater table, beginning at the northwest corner of the site (Phase 1), then moving to the southwest corner of the site (Phase 2), and ending at the southeast corner of the site (Phase 3). The next three phases (Phases 3 – 6) would consist of excavation below the groundwater table, beginning at the southeast corner of the site and continuing in reverse order to the starting point. The floor of the existing pit would be lowered approximately 60 feet, or 40 feet below the groundwater table. A 75-acre lake would be created as part of the final reclamation of the entire site. Based on projections of the Applicant, the mining operation would continue for approximately 20 years, during which time approximately 14 million tons of aggregate would be extracted. Although the production rate is expected to be approximately 250,000 tons a year, during the first few years, the rate would increase too as high as 750,000 tons a year. In addition to this expansion, concrete and asphalt recycling is proposed on-site, as well as replacing a concrete batch plant and installing a new asphalt hot mixing plant. *Exhibit 1, Attachments d and f; Exhibit 25.*
9. Associated with the request to expand mining activities on site, the Applicant requests a variance to reduce the 100-foot setback required by the Mineral Extraction Code (TCC 17.20.230) to 50 feet along the south and west property lines. TCC 17.20.230 allows the “approval authority” to reduce the setback “if, due to topography, or adjoining easements or designated resource lands of long-term commercial significance, the purposes of this chapter can be met with the reduced setback.” The purposes of the

Mineral Extraction Code are "to increase the protection of ground and surface water from the effects of surface mining and other mineral extraction, to lessen conflicts between surface mines and other mineral extraction operations and nearby land uses, and to continue the availability of mined materials to the citizens and commerce of the area." *TCC 17.20.010*. The former Hard Rock Mining Company site, directly west of the southwest corner of the site, is a designated Mineral Resource Land of Long-Term Commercial Significance. The other lands adjacent to the site do not carry the designation. However, the lands west and south of the site are within the authorized boundary of the Black River Unit of the Nisqually National Wildlife Refuge. The Refuge Manager objected to the variance request for a reduced setback along the southern property line. *Exhibit 1, page 9; Exhibit 1, Attachment k; Exhibit 5; Testimony of Ms. Pritchett.*

10. The Applicant proposes the establishment and operation of a hot mix asphalt plant on site. The location of the plant would be approximately 800 feet from the northern property boundary (*Exhibit 1, Attachment d*). The asphalt plant would be a drum-mix type asphalt plant with a three-zone dryer. Emissions from the dryer would be controlled by a reverse airflow type baghouse. The baghouse would include a separator that would remove 75 percent of the particulate from the airflow prior to bag filtering. Exhaust air would flow into one of three separate chambers for bag filtering. After the dust cake builds to certain point, the air flow would reverse, causing the dust cake to drop to a hopper, where it would be recycled back into the mix. The baghouse would remove more than 99 percent of the particulate from the exhaust stream. The Olympic Air Pollution Control Authority (OAPCA) determined that the proposed equipment represents the Best Available Control Technology pursuant to WAC 173-400-113(2). *Exhibit 18.*
11. The stack of the asphalt plant would be approximately 72 feet high, consistent with the "Good Engineering Practice" (GEP) stack height. As defined by the EPA, the GEP stack height is "[t]he height necessary to insure that emissions from the stack do not result in excessive concentrations of any air pollutant in the immediate vicinity of the source as a result of atmospheric downwash, eddies or wakes which may be created by the source itself, nearby structures or nearby terrain." *Exhibit 17*. In calculating pollution impacts, the Applicant's consultant considered off-site terrain including hills/peaks ranging from 354 to 2650 feet in elevation and located as far as 13 kilometers from the site. *Exhibit 17.*
12. The asphalt plant would be fueled by natural gas through an extension of the Puget Sound Energy natural gas line following 88th Avenue from Little Rock Road to the project site. Initially the asphalt plant would produce approximately 150,000 tons of asphalt per year. At peak production, the asphalt plant would produce approximately 270,000 tons per year. *Exhibit 1, Staff Report; Exhibit 1, Attachment t.*
13. The Olympic Air Pollution Control Authority (OAPCA) reviewed the proposal and preliminarily determined that, with conditions, the hot mix asphalt plant would comply with applicable state and federal air quality standards. A Notice of Construction was

issued on May 21, 2001 (Exhibit 18). According to the Notice of Construction, the maximum emission of particulate matter is projected to be 134.79 pounds per day, and the maximum emission of federally designated Hazardous Air Pollutants is projected to be 22.29 pounds per day. Emission of five chemicals designated by the state as Toxic Air Pollutants were identified, including polyaromatic hydrocarbons (PAHs), benzene, formaldehyde, nickel and naphthalene. The maximum emission of PAHs is expected to be 0.0466 pounds per day. With respect to ambient air quality, the OAPCA determined that the predicted impacts would be "less than the significance threshold" for these pollutants, measured to a distance of five kilometers. The OAPCA determination was based on asphalt production of nearly twice that proposed by the Applicant (500,000 tons per year), assuming ten hours of operation per day, six days per week. As noted previously, the Applicant anticipates a peak production of 270,000 tons per year. However, OAPCA noted that "around-the-clock" operations would result in higher emission rates. Thus, OAPCA recommended that Asphalt production be limited to ten hours per day and 500,000 tons per year. Other recommended conditions included paving the main access road from the terminus of 88th Avenue Southwest to the asphalt plant. *Exhibit 1, Attachment t; Exhibit 18.*

14. The manager of the Black River Refuge provided written testimony regarding the effects of PAHs on plants and wildlife. Effects on fish include "decreases in egg production, testosterone and estrogen levels, and fry survival and increases in egg mortality and morphological abnormalities." Some PAHs are also toxic to birds and bird eggs, and small atmospheric particulate containing PAHs "are easily inhaled and may pose special problems for birds, insects, and bats." Concern was raised that there is insufficient information on the containment of particulate and volatiles during the process of transferring asphalt to trucks. *Exhibit 5.* This testimony was supported by a written report of Dr. Mace Barron, an environmental toxicologist retained by the Black Hills Audubon Society. Dr. Barron cited scientific literature indicating that the types of compounds emitted from the facility "are toxic to fish in parts per billion concentrations." Dr. Barron further explained that "PAHs can be toxic to benthic invertebrates at low parts per million and can accumulate in aquatic organisms from both sediment and water" and that PAH exposure to salmon embryos can cause untoward effects at concentrations as low as one part per billion. *Exhibit 30, Attachment 38(F), pages 7-8 (internal citations omitted).* No information was provided by Dr. Barron or any other consultant/witness regarding the concentration of pollutants from the facility that would be taken up by fish and wildlife within the Black River Refuge area. *Exhibit 32, December 28, 2001 Sonnicksen Engineering Letter.*
15. Nearby residents questioned whether the OAPCA's determination adequately considered air pollution impacts. There was testimony that the area between the site and the Black Hills to the west form a "partial topographic bowl" which may collect emissions from the site and cause higher levels of pollution than indicated in the report. Although the OAPCA determination was based on a five-kilometer radius, the Applicant's analysis, which was submitted to OAPCA, appears to have considered terrain as far away as 13

kilometers. *Exhibit 1, Attachment t; Exhibit 10 (November 19, 2001 Letter); Exhibit 17; Exhibit 18; Testimony of Ms. Denver.*

16. The hours of operation for the existing operation are 7:00 a.m. to 5:00 p.m. Monday through Friday.³ The proposed hours of operation for the expansion are 7:00 a.m. to 4:30 p.m. Monday through Friday during off-peak seasons, and 7:00 a.m. to 7:00 p.m. Monday through Saturday during peak seasons (June through November). Also, there would be temporary nighttime operations as needed to provide for public agency projects. *Exhibit 1, Staff Report.* The County Mineral Extraction Code (Chapter 17.20 TCC) limits the hours of operation for gravel mining and accessory uses (including asphalt production) within or adjacent to residential districts to 7:00 a.m. to 7:00 p.m. Monday through Saturday. Certain activities are exempt from this limitation, including hauling to jobs under contract with a public agency when public notice is provided.⁴ *TCC 17.20.115.*
17. Truck traffic currently accesses the site from a single driveway connecting to the west end of 88th Avenue Southwest. *Exhibit 2, page 2.* Heffron Transportation Inc. (Heffron) analyzed the current and projected traffic conditions in a traffic study dated July 2000. The study assumed that the Applicant would sell between 250,000 and 750,000 tons of product per year for the next 20 years, with 250,000 tons per year sold from 2001 through 2003; 500,000 tons per year sold from 2004 through 2006; 650,000 tons per year sold from 2007 through 2010; and 750,000 tons per year sold from 2011 through 2020. *Exhibit 2, page 2.* With the proposed expansion and production increase, truck traffic would continue to access the site from 88th Avenue Southwest. *Exhibit 2, page 2.*
18. The majority of the traffic increase associated with the expansion would be truck traffic; only six additional employees are anticipated once the pit expands. *Exhibit 2, pages 2 and 5.* The traffic study assumed hours of operation of 7:00 A.M. to 4:30 P.M. Monday through Friday during the December through May off-peak season, and 7:00 A.M. to 7:00 PM Monday through Saturday during the June through November peak season. The employee hours would be similar to the hours of operation, with employees typically working 7:00 A.M. to 5:00 P.M. during the off-peak season and 7:00 A.M. to 7:30 P.M. during the peak season. *Exhibit 2, page 2.*

³ The Applicant's noise study reports that crushing plant operations currently begin at 6:30 a.m. *Exhibit 15, Appendix E.* Several residents commented that truck traffic has been heard before 5:00 a.m. and after 8:00 p.m. *Exhibit 8; Testimony of Ms. Jefferson; Testimony of Mr. Sand.* It is unclear whether any of the early morning or evening hauling was authorized by TCC 17.20.115.

⁴ Condition No. 3 of the MDNS issued for the proposal (*Exhibit 1, Attachment h*) requires the Applicant to limit gravel crushing to the hours of 7:00 a.m. to 10:00 p.m., in accordance with the recommendation of the Applicant's sound engineer. In addition, Condition No. 5 of the MDNS requires that nighttime asphalt production comply with applicable noise standards "if night time production is approved." These conditions should not be read as allowing the Applicant to exceed the operating limits set forth in the Mineral Extraction Code. TCC 17.20.115 specifies only three activities that are exempt from the 7:00 a.m. to 7:00 p.m. limit: 1) excavation and loading necessitated by flood emergencies; the early morning processing of concrete necessary to provide beneficial strength; and 3) hauling to jobs under contract with a public agency. It appears that neither crushing nor asphalt production would be allowed after 7:00 p.m. The Applicant is required to comply with the hours of operation set forth in the ordinance.

19. For the opening year (assumed sale of 500,000 tons of product for a conservative analysis), the proposal is expected to generate an average of 198 trips per day (considering both peak and off-peak seasons) and 298 trips per day during the peak season. These figures include traffic generated by aggregate trucks, concrete trucks, asphalt trucks, delivery trucks, and employee trips. The highest number of trips would occur during the A.M. peak hour, with 19 A.M. peak hour trips during the off-peak season (17 trucks and two passenger vehicles) and 29 A.M. peak hour trips during the peak season (27 trucks and two passenger vehicles). The amount of traffic attributable to the heavy trucks only (aggregate, concrete and asphalt trucks) during the peak season would be 260 trips per day, including 27 A.M. peak hour trips and 4 P.M. peak hour trips. *Exhibit 2; Testimony of Ms. Van Dyke.*
20. For the maximum production year (sale of 750,000 tons of product assumed), the proposal is expected to generate an average of 276 trips per day (considering both peak and off-peak seasons), including 27 A.M. peak hour trips, and 430 trips per day during the peak season, including 44 A.M. peak hour trips. The amount of traffic attributable to the heavy trucks only during the peak season would be 392 trips per day, including 42 A.M. peak hour trips. *Exhibit 2; Testimony of Ms. Van Dyke.*
21. Most of the product would be transported from the facility via heavy haulers (dump trucks with trailers, used to haul aggregate and asphalt) or concrete trucks. The maximum axle load of the trucks would be less than or equal to the maximum load limits set by WSDOT. *Exhibit 2, page 5.*
22. Heffron performed a Level of Service (LOS) analysis of the intersection of 88th Avenue Southwest and Littlerock Road Southwest for the years 2001 and 2020.⁵ The analysis was based on traffic generated by all three uses of the site and included all trucks accessing the site, not just the trucks operated by the Applicant. The use of single and double truck combinations was assumed. *Exhibit 2; Testimony of Ms. Van Dyke.* As described by Heffron, LOS is "a qualitative measure used to characterize traffic operating conditions." LOS may range from "A" through "F", with LOS A representing "good traffic operations with little or no delay to motorists" and LOS F representing "poor traffic operations with long delays." *Exhibit 2, pages 17-18.* As of the 2000 date of the study, the northbound left turn movement of the intersection operated at LOS A during the A.M. peak hour and the eastbound movement (including vehicles turning left and right from 88th Avenue Southwest onto Littlerock Road Southwest) operated at LOS B. The study anticipated for the year 2001 that the LOS for both turning movements during the A.M. peak hour would remain the same, with or without the expanded gravel mining operations, even during peak production months. The study anticipated that for the year 2020, the northbound left turn movement would continue to operate at LOS A during the A.M. peak hour, with or without the expanded gravel mining operations, but the LOS of the eastbound movement would drop to LOS C. The drop to LOS C is expected to occur regardless of the expanded mining operation. During the PM peak hour, the LOS for

⁵ The study assumed that the expanded pit would be operational in 2001.

neither turning movement would drop as a result of the expanded mining operations, either in 2001 or 2020. *Exhibit 2, page 18.*

23. Much public comment related to the truck traffic on 88th Avenue Southwest was received. In particular, it was noted that the road is of insufficient width to allow two trucks to pass and accommodate pedestrian traffic. There was testimony that the width of the trucks sometimes causes them to drive on or over the centerline of the road. There was also testimony that the trucks require more than one lane to turn corners. There are no sidewalks or shoulders on 88th Avenue Southwest; the roadside ditch is immediately adjacent to the roadway with no walking area. *Exhibit 1, Attachment u; Exhibit 8-17; Exhibit 8-18; Exhibit 8-24; Exhibit 8-25; Exhibit 8-56; Testimony of Ms. Olson; Testimony of Mr. Sand.*
24. The accident history of the intersection of 88th Avenue Southwest and Littlerock Road Southwest and the portion of 88th Avenue Southwest between the subject property and Littlerock Road was submitted as part of the Heffron Traffic study. Three accidents were recorded between January 1, 1993 and December 31, 1999; however, the quarry was dormant for the last five years. The three accidents, which occurred in 1993, 1994, and 1995, respectively, were not truck or pedestrian related. *Exhibit 2, page 17; Testimony of Ms. Van Dyke.*
25. Concern was also raised that the heavy truck traffic would damage 88th Avenue Southwest. *Testimony of Mr. Long; Testimony of Ms. Jefferson.* Although there was public comment that the road contains some cracks, the County has determined that the road is in "acceptable condition." An existing Haul Road Agreement requires the Applicant to repair the roadway if damaged by Quality Rock operations. The Agreement would be updated prior to expansion. *Exhibit 1, Attachments k and l; Testimony of Ms. Jefferson.*
26. The Applicant performed a sound analysis in which the existing sound levels were compared with expected sound levels resulting from the expanded mining operations. Sound was measured at three locations in April of 2000. The first location was at the eastern property line, 1,300 feet south of 88th Avenue Southwest and 100 feet west of an existing residence. The second location was at the southwest corner of a residential property located northeast of the site on 88th Avenue Southwest. The monitor was approximately 300 feet southwest of the residence. The third location was 125 feet south of the centerline of 88th Avenue Southwest and 600 feet east of the site access. During the test, crushing and screening were taking place in the southern portion of the existing mine area. The working face shielded these activities. Earth-moving activities involving front-end loaders, an excavator, a bulldozer and a dump truck were taking place in the east and northeast portions of the site. In addition, a temporary road construction project was taking place near the east property line. *Exhibit 15, Appendix E.*
27. Thurston County ordinances limit the daytime (7 a.m. to 10 p.m.) noise level to 55 dBA and the nighttime (10 p.m. to 7 a.m.) noise level to 45 dBA. However, the noise levels

may exceed these limits for brief periods of time. The noise may exceed the limits by 5 dBA for no more than 15 minutes per hour, by 10 dBA for no more than 5 minutes per hour, and by 15 dBA for no more than 1.5 minutes per hour. Thus, the maximum hourly noise level is 70 dBA during daytime hours and 60 dBA during the nighttime hours for up to 1.5 minutes. The increase in dBA is not directly proportional to the judged loudness of the noise. Although an increase of 5 dBA is considered to be a moderate increase in judged loudness, an increase of 10 dBA represents a doubling of the judged loudness. An increase of 20 dBA would be judged to be four times as loud. The Thurston County noise limits do not apply to the sound of trucks operating on public roads or to back-up warning beepers. *Exhibit 15, Appendix E; Testimony of Mr. Bruck.*

28. The existing sound levels at the three locations comply with Thurston County daytime and nighttime standards, except during the 6:00 a.m. hour, when existing crushing plant operations caused the sound levels to exceed the nighttime 45 dBA/60 dBA standards. The crushing plant operations currently start at 6:30 a.m. The Applicant proposes to change the crushing plant hours to begin at 7:00 a.m. *Exhibit 15, Appendix E.*
29. The sound levels that would be detected at the three identified locations would change over time according to the phase of development. During the first phase of expansion, crushing equipment would be placed in the northwest portion of the site, but it would be moved south during subsequent phases. The equipment would be operated behind a working face to the south and east. Noise mitigation measures would include a 20-foot berm along the east boundary from the first phase and a 20-foot berm along the south boundary during later phases. Stockpiles near the northeast corner of the site would provide additional protection, but the amount of the protection would vary. Additional noise mitigation would be required if mining operations were extended into nighttime hours. The Applicant proposes raising the height of the eastern berm from 20 feet to 30 feet above the site elevation in the event that nighttime activities commence. *Exhibit 15, Appendix E.*
30. Assuming continuous operation of all equipment, except haul trucks on-site, which were evaluated according to the number of trips per hour (23-36) and use of the noise mitigation measures, the sound at the receiving locations during all three phases of operation would not exceed Thurston County daytime noise limits. At location 1, the sound level would vary between 45 and 51 dBA, at location 2, between 43 and 54 dBA, and at location 3, between 40 and 50 dBA. As a point of reference, 40 dBA corresponds to the sound of a living room, 50 dBA corresponds to the sound of an office or classroom, and 60 dBA corresponds to normal conversation, measured at three feet. *Exhibit 15, Appendix E.*
31. The current noise level of traffic, measured approximately 125 feet south of the centerline of 88th Avenue Southwest and 600 feet east of the site access, is 50 dBA. However, this measurement was taken on an off-peak day. On a peak day, assuming the maximum extraction allowed by the existing permit, the predicted noise level is 56 dBA. With the proposed expansion, the noise level of traffic in the year 2020 is expected to be 57 dBA

during an average day, and 60 dBA during a peak day. The maximum dBA permitted by the Federal Highway Administration for residential receivers is 67 dBA. *Exhibit 15, Appendix E; Testimony of Mr. Bruck.*

32. There is a Class II wetland crossing the northeast corner of the site. Class II wetlands are defined as follows (TCC 17.15.920(B)):

"Class II wetlands" occur more commonly than Class I wetlands. These wetlands are those that: (1) provide habitat for very sensitive or important wildlife or plants, (2) are either difficult to replace, or (3) provide very high functions and values, particularly for wildlife habitat.

Class II wetlands satisfy no Class I criteria and are:

1. Those that have a documented occupance in the wetland of a federal or state listed sensitive plant, animal, or fish species; or
2. Those that contain priority species or habitats recognized by state agencies; or
3. Wetlands with significant functions which may not be adequately replicated through creation or restoration; or
4. Wetlands with significant habitat value of twenty-two or more points from the rating system.

33. The wetland in the northeast portion of the site carries the Class II designation because the habitat value exceeds 22 points from the Washington State Wetland Rating System and does not satisfy the Class I criteria. TCC 17.15.920 describes Class I wetlands as follows:

"Class I wetlands" can be described as the cream of the crop. Generally, these wetlands are not common and would make up a small percentage of the wetlands in the state. These are wetlands that (1) provide a life support function for threatened or endangered species that have been documented, and the wetland is on file in databases maintained by state agencies, (2) represents a high quality example of a rare wetland type, (3) are rare habitat type within a given region, or (4) are relatively undisturbed and contain ecological attributes that are impossible to replace within a human lifetime. Class I wetlands are:

1. Those that have a documented occurrence in the wetland of a federal or state listed endangered, threatened plant, animal, or fish species; or
2. High quality native wetland communities which qualify for inclusion in the Natural Heritage Information System; or
3. Documented as regionally significant waterfowl or shorebird concentration areas; or
4. Wetlands with irreplaceable ecological attributes which are impossible to replace in a human lifetime, such as bogs.

34. When classifying the wetland, the Applicant's consultant, Ecological Land Services (ELS), followed the Washington State Department of Ecology Wetland Rating System (the Category I wetland in the Washington Rating System corresponds to Thurston County's Class I wetland). ELS evaluated the wetland using the Department of Ecology (DOE) forms. These forms provide a series of questions that establish a particular rating. Based on the wetland rating form, and using a conservative approach (more likely to find a higher wetland classification), ELS could not bring the wetland to a Class I rating. *Testimony of Mr. Garrison.* High intensity land uses, including commercial and industrial land uses, must maintain a 200-foot buffer from Class II wetlands. *TCC 17.15, Table 10.*
35. Although there are existing rock stockpiles and a topsoil berm within the required 200-foot buffer, none of the gravel mining expansion would occur within the buffer. Approximately three acres of the 200-foot wetland buffer are disturbed. The Applicant proposes wetland buffer averaging to increase the wetland buffer by three acres south and east of the wetland, and wetland buffer enhancement for a portion of the wetland buffer located between the wetland edge and edge of the expansion. The topsoil berm would be hydro seeded to prevent erosion, and removed after completion of mining. The berm footprint would then be replanted. The wetland buffer would be fenced. *Exhibit 16; Testimony of Mr. Garrison.*
36. Within the Class II wetland is a Type 3 stream, Ashley Creek. The stream carries the Type 3 designation because it contains Coho salmon (lower stream designations are for non-fish bearing streams). Coho salmon are not listed as state or federal endangered or threatened species. Pursuant to TCC 17.15.935, Type 3 streams are subject to 100-foot buffers.⁶ *Testimony of Ms. Wilson; Exhibit 28; Exhibit 31; Exhibit 30, Attachments 38 and 39.*
37. Ashley Creek originates from a spring east of the site, crosses the northeast corner of the property, and flows approximately one-half mile before entering the Black River wetland system. The point at which the stream discharges into the Black River wetland is 25 feet lower in elevation than the elevation of the stream where it leaves the site (160 feet). The portion of the stream channel crossing the property was excavated at some time in the past. *Exhibit 34, page 1.*
38. For approximately 1,000 feet downstream of the site, the stream is covered by a nearly unbroken canopy of vegetation, dominated by coniferous and hardwood forest species. The substrate consists of gravels and cobbles, except for small deposits of sand where pooling has occurred. The stream drops in elevation as it approaches the Black River wetland and increases in velocity. *Exhibit 34, pages 4-5.* On-site, the stream narrows and deepens for the first 300 feet upstream of the northeast corner of the property.

⁶ Besides Coho salmon, Coastal Cutthroat are known to use the Ashley Creek/Black River system. The Coastal Cutthroat is not a state or federal listed species. *Exhibit 30, Attachment 21; Exhibit 62.*

Farther upstream, the trees were cleared for a buried gas line right-of-way, but there is grass cover along the banks. The substrate consists of gravels and cobbles. Within the wetland, the channel is shaded with a canopy of deciduous trees. There is a dense cover of reed canary grass along the banks. Within the channel there is large woody debris and encroaching grass. *Exhibit 34, page 5.*

39. The wetland classification was an issue of dispute due to the possible presence of the Oregon Spotted Frog in Ashley Creek. Because the Oregon Spotted Frog is state-listed as an endangered species (WAC 232-12-014), the presence of the frog would elevate the wetland to a Class I rating and a 300-foot buffer and Habitat Management Plan would be required. *Testimony of Ms. Wilson; Testimony of Mr. Garrison; Exhibit 31.*
40. Department of Fish and Wildlife studies published in 1997 and 2000 indicate that there are only three regions in Washington where the Oregon Spotted Frog is known to exist. One of these regions, Dempsey Creek, is in Thurston County. Dempsey Creek is west of site, across the Black River drainage system. In addition, the Oregon Spotted Frog has been observed within the Black River Refuge. *Exhibit 1, Attachment u-15; Exhibit 34, page 2; Testimony of Mr. Garrison; Testimony of Mr. Davis.*
41. There is no documentation of the Oregon spotted frog in Ashley Creek, nor is Ashley Creek listed in the Natural Heritage Information System as a high-quality wetland. Wildlife studies prepared by the Applicant's consultants, Biota Pacific Environmental Services, Inc. and ELS, concluded that there is little chance that the Oregon Spotted Frog inhabits the site. *Exhibit 15, Appendix C; Exhibit 34; Exhibit 51.* ELS's conclusion regarding habitat was based on the suitability of the site for active season habitat⁷ according to several factors including the stream current; the stream channel substrate (gravel and cobble rather than mud); the incised stream channel; the temporary and seasonal fluctuations in the water levels of the stream and wetland; and the proportion of open water to vegetation (see Exhibit 34 for a detailed review of the literature concerning preferred Oregon Spotted Frog habitat). *Exhibit 34, pages 5-6; Testimony of Mr. Hayes (regarding limitations of ELS report).* The ELS review of the habitat was based on Fish & Wildlife reports but did not include consulting directly with Fish & Wildlife staff. ELS did not perform a wildlife survey (identifying the presence of wildlife) because of the winter season. *Testimony of Mr. Garrison.*
42. Credible testimony was provided from Mark Hayes, a research scientist with ten years of experience studying the Oregon Spotted Frog, that the ELS study failed to consider the suitability of the site for overwintering habitat. The overwintering period is from approximately November to late February. The Oregon Spotted Frogs' requirements for overwintering habitat are different from active season habitat, and the distance the frogs travel between habitats may range from 200 to 1,000 meters. Thus, the site's

⁷ Habitat required by the Oregon Spotted Frog falls into three compartments: active season (March to October), breeding (late February to early March) and overwintering (November to late February). *Testimony of Mr. Hayes; Exhibit 57.*

unsuitability for active season habitat does not necessarily preclude its use for overwintering habitat. Some characteristics of Ashley Creek, such as the incised stream channel, support overwintering habitat. *Exhibit 57.*

43. Oregon Spotted Frogs are extremely difficult to locate during any season, and it is unclear whether further research would yield conclusive results in the near future. Mr. Hayes submitted that Oregon Spotted Frogs are "extraordinarily cryptic" even when surface active (three years elapsed between finding the first frog at Dempsey Creek and finding the larger population); that "the species is difficult to detect even when an individual's location can be pinpointed using radio-tracking;" that recognition of the species during between-season movements "can easily go entirely unnoticed without special directed trapping efforts;" and that "frogs are not surface visible" during overwintering. *Exhibit 57.*
44. *82* Groundwater beneath the site flows from east to west, away from Ashley Creek and neighboring wells but toward the Black River. Storm drainage from the site would be infiltrated more than 1,200 feet east of the Black River after treatment in a biofiltration swale. The proposed mining activities are not expected to affect the quality of upgradient wells. There are no wells downgradient of the site; groundwater leaving the site follows the Black River to the south. Because groundwater west of the Black River flows in a west to east direction, wells west of the Black River would not be impacted by the proposal. *Exhibit 25, Figure 11; Exhibit 32, January 7, 2002 SubTerra Letter; Exhibit 33; Testimony of Mr. Bennett; Testimony of Ms. Romero.*
45. *80* The DOE has listed the Black River as water quality impaired under Section 303(d) of the Clean Water Act, and has established Total Maximum Daily Loads (TMDLs) for the river that were approved by the U.S. Environmental Protection Agency. The water quality impairment was caused in part by low stream flows. Concern was raised that the proposal would further reduce water flows and thus exacerbate the water quality problems, particularly during the dryer summer months when production would be at its peak. Suggestion was made that any groundwater monitoring plan explicitly address impacts on Black River flows. *Exhibit 5; Exhibit 12; Exhibit 8-15; Testimony of Mr. Sand.*
46. The effects of gravel mining on groundwater depend on the specific activities proposed. The risk of groundwater contamination caused by excavating above the water table is relatively low. The risk increases for excavation within an aquifer, but in Thurston County the additional risk is small and is minimized by use of best management practices. Concrete batch plants cause the most significant risks to groundwater quality, as well as petroleum leaks and spills caused by equipment fueling, maintenance and washing. The process waters from concrete batch plants have high pH levels and can contain cement additives. Asphalt plants present a lesser risk than concrete plants. The risks to groundwater quality associated with asphalt plants include stormwater runoff, vehicle fueling and fuel storage. Although spills of asphalt cannot penetrate into the ground, spills of fuels needed to heat the asphalt and lubricate the equipment can

contaminate stormwater discharges. All of the activities associated with gravel mining require regulatory oversight to ensure protection of groundwater quality. *Exhibit 59.*

47. The proposed mining activity below the water table would result in the creation of a 75-acre lake. The effect of the lake would be that the groundwater level upgradient of the lake would be lowered slightly and the groundwater level downgradient of the lake would be raised slightly at the lake boundaries. The County hydrologist, Robert Mead, anticipates that the drawdown of the aquifer would be less than one inch at the property line. *Exhibit 25, Page 9 and Figures 8, 11, and 14; Exhibit 59; Testimony of Mr. Bennett; Testimony of Mr. Mead.* Although the creation of the lake would result in the loss of approximately 9.5 million gallons of water per year through evaporation, this loss would be partially offset by increased storage capacity resulting from the lake. No water right is required for the evaporative loss of water. *Exhibit 25, page 10; Exhibit 32, January 7, 2002 SubTerra Letter; Exhibit 33; Exhibit 59 (for general information on evaporative losses and increased storage capacity).*
48. A primary issue raised at the hearing was the hydrologic connection between Ashley Creek and the adjoining wetland and the aquifer that would be impacted by the mining activities. According to the U.S. Geological Survey (USGS) mapping of the area and inferences made by data collected from wells ranging from approximately 1,000 to 3,000 feet from Ashley Creek, the Creek is perched, underlain by an approximate 30-foot layer of Vashon till (Qvt) separating it from the Vashon Advance Outwash (Qva) aquifer. The proposed expansion would occur within the Qva. The presence of Vashon till is significant because it has a low permeability, even with interbedded sand and gravel layers. A continuous layer of till would mean that impacts to the Qva aquifer would not significantly affect Ashley Creek or the adjoining wetland. Although no borings were made on-site in the wetland area, thus precluding a definitive determination as to the continuity of the till, some evidence suggests that the inferences are accurate, such as the 15-foot elevation difference between the wetland and the existing infiltration pond, which is hydrologically connected to the water table. Also, previous excavation below the elevation of the wetland did not produce water. The proposed expansion would not extend any farther east than the previously excavated area. *Exhibit 25; Exhibit 33; Exhibit 61; Testimony of Mr. Mead.*
49. As noted above (Finding of Fact No. 47), Mr. Mead anticipates that, based on computer modeling using the Theis Aquifer Analysis Program, version 3.2 (1992), the drawdown of the aquifer caused by the mining activity would not exceed one inch. The one-inch drawdown was calculated using the transmissivity rates contained in the USGS report entitled "Conceptual Model and Numerical Simulations of the Groundwater Flow System in Thurston County, Washington." Although the USGS report provided a 100-foot per day transmissivity rate for the area, Mr. Mead used a rate of 120 feet per day in his modeling to account for the courser materials typically found in mining sites. Because the Theis program requires that transmissivity be expressed in gallons per day per square foot rather than feet per day, Mr. Mead multiplied the feet per day rate by 7.48 to achieve

the correct conversion. Thus, a figure of 898 was inputted into the Theis program. This figure yielded a drawdown of less than one inch. *Testimony of Mr. Mead; Exhibit 60.*

50. After performing a brief review of the Theis program and Mr. Mead's computer modeling, the Audubon Society's consultant, Nadine Romero, agreed that the one-inch result was consistent with the inputs Mr. Mead used, but questioned the appropriateness of using inputs that were not based on a site-specific study. The consultant "played around" with the inputs and came up with a drawdown of two feet for a well 1,000 feet from the site, based on a transmissivity rate of 100 gallons per day per square foot. *Testimony of Ms. Romero.* It was not clear from Ms. Romero's testimony why the 100 gallons per day per square foot rate was used; she did not comment on the reasonableness of using that rate. *Testimony of Ms. Romero.* In response to Ms. Romero's testimony, Mr. Mead suggested that Ms. Romero was attempting to use the USGS 100 feet per day transmissivity rate, but failed to make the necessary conversion to gallons per day per square foot before inputting the number into the computer. This theory is supported by testimony of Ms. Romero that she did not understand the 898 gallons per day per square foot number used by Mr. Mead. *Testimony of Mr. Mead; Testimony of Ms. Romero.*
51. Concern was also raised that there would be a loss of hydraulic head for the upgradient wells east of the site. Mr. Mead submitted that this change would be very minor. The wells east of the site are not artesian wells because they have water levels that range from six to 33 feet below the ground surface. For a well to be artesian, the groundwater pressure must be greater than the elevation of the ground surface. Mr. Mead submitted that none of the wells have water levels that are capable of creating an artesian situation. *Exhibit 33; Testimony of Mr. Mead.*
52. The Applicant submitted a Storm Water Drainage Plan that was preliminarily approved by the County Roads & Transportation Services Department as meeting the intent of the Drainage Design and Erosion Control Manual. All storm drainage would be infiltrated on-site. For the concrete batch plant, runoff from the paved truck rinse off area would flow across a concrete pad toward a series of sedimentation weirs and into secondary sediment settling basins. From the settling basins, the water would flow to a treatment and recycling area where the water would be recycled back to the batch plant. Excess water would be pH neutralized and directed to a lined overflow detention basin. The basin would be sized for the 25 year, 24 hour storm event per DNR requirements. An emergency overflow ditch would convey the water from the basin to a grass-lined swale for treatment prior to discharge into an infiltration pond. For the asphalt plant, runoff would be contained within a concrete pad with a perimeter curb. The concrete pad would be sloped to direct runoff into the grass-lined swale for treatment prior to discharge into the infiltration pond. The location of the infiltration pond is more than 1,200 feet from the Black River. The grass-lined swale would be 280 feet long, eight feet wide at the bottom and serpentine-shaped. Due to the soil type, the swale would be lined with a

minimum six-inch thickness of organic sandy loam.⁸ *Exhibit 1, Attachment n; Exhibit 21; Exhibit 32, January 7, 2002 SubTerra Letter; Testimony of Mr. Bennett.*

53. In addition to the requirements of the Thurston County Drainage Design and Erosion Control Manual, stormwater discharge from the site is governed by the U.S. Environmental Protection Agency's (EPA's) National Pollutant Discharge Elimination System (NPDES) permit regulations. These regulations are implemented, and enforced, by the Washington State Department of Ecology.⁹ *Drainage Design and Erosion Control Manual, Section 2.1.4; Exhibit 58.*
30. 54. Spills of asphalt from the mixing plant do not present a significant risk to groundwater because asphalt solidifies quickly. The oil used in the asphalt plant would be shipped to the site in solid form and would thus not present a spill risk. Equipment fueling would occur on-site at a fueling station meeting the requirements of the Thurston County Fire Marshal's Office. The aboveground fuel tanks would be required to satisfy Fire Marshal and DOE standards for leak prevention and secondary containment. The County submitted that the Applicant has an adequate spill prevention and response plan of file with the Moderate Risk Waste Section of the Public Health and Social Services Department. *Exhibit 1, Attachment o.* Although the County Public Health and Social Services Department submitted in a memo dated October 31, 2001, that "the Ground Water section of this department has determined that the existing operations and proposed expansion does pose a significant risk to ground and surface water resources," it identified several conditions to address this issue, including the installation of two additional ground water monitoring wells, to be monitored quarterly. *Exhibit 1, Attachment o.* Compliance with these conditions is recommended by the County as conditions of SUP approval and included in the MDNS issued for the proposal.¹⁰ *Exhibit 1, page 13; Exhibit 1, Attachment h.*
55. Scientific literature submitted by the Black Hills Audubon Society on storm drainage treatment facilities (*see Exhibit 40*) indicates that the performance of such facilities is not consistent. For example, the reduction of Total Suspended Solids (TSS) may range from 20 to 98 percent in wet detention ponds. *Exhibit 40, Article: Performance of Urban Stormwater Best Management Practices.* Factors such as the size of the facility and the detention time impact the amount of pollution removed. *Exhibit 40, Article: Stormwater Pollutant Removal by Two Wet Ponds in Bellevue, Washington; see also Exhibit 5*

⁸ The swale specifications appear to track the requirements set forth in section 7.4.1 of the Drainage Design and Erosion Control Manual. *Exhibit 21.*

⁹ According to its letter dated January 18, 2002, the DOE performed a site inspection in December of 2001 and found several aspects of the current storm drainage system to be out of compliance with NPDES requirements. This letter did not represent a formal enforcement action and it is unclear whether a formal enforcement action has been or will be initiated. The letter set forth a schedule for correcting deficiencies and indicated that there would be further DOE inspection of the site. *Exhibit 58.*

¹⁰ The conditions contained in the MDNS appear to be much more stringent than those identified in the Health Department memo. For example, while the Health Department memo recommends quarterly well monitoring for one year, the MDNS requires quarterly monitoring for two years, plus semi-annual monitoring after the initial two-year period. *Exhibit 1, Attachments h and o.*

("maximum residence time in bioswales and on-site treatment systems would help to reduce contaminant effects, however, this will be very limited"). In addition, the age of the facility is factor, as storm drainage facilities may provide reduced contaminant removal and need increased maintenance as they age. *Exhibit 40, Article: Stormwater Management Infiltration Practices in Maryland: A Second Survey*. Based on the literature submitted, the Black Hills Audubon Society argued that because there is uncertainty with respect to the effectiveness of storm drainage facilities, the Hearing Examiner has an inadequate record from which to assess the effect of the Applicant's storm drainage facilities on water quality. *Post-Hearing Brief of Black Hills Audubon Society*.

56. There is an existing ridge in the northwest corner of the site. Although there is a notch in the ridge that *might* allow excess storm water to flow from the site into the Black River during flood events (this issue is being reviewed by DNR), the final site configuration would preclude a surface water connection between the new lake and the Black River and its associated wetlands. In the northwest corner of the site, the top of the pit slope would be 25 feet above the water table and lake level. A 300-foot buffer between the edge of the mine and the off-site wetland would be maintained. *Exhibit 32, January 7, 2002 SubTerra Letter and January 7, 2002 ELS Letter; Testimony of Ms. Serdar; Testimony of Ms. Takekawa*.
57. A concern raised by numerous residents was the possibility that contaminated materials are buried on-site, specifically materials from the Port of Olympia and the Cascade Pole superfund site. *Exhibit 1, Attachments u-4 and u-5; Exhibit 8-16; Exhibit 52; Testimony of Mr. Dierker*. The County submitted that solid waste from the Port of Olympia was transported to the site between 1982 and 1990 and buried in an excavated pit. The material was from the log storage, handling and processing area at the Port of Olympia, not the Cascade Pole site. The County did not consider any of the materials hazardous or dangerous waste. Pursuant to WAC 173-304, groundwater monitoring was required for the landfill activity, and monitoring wells were constructed. The wells were last tested in January of 2000. The tests revealed nitrate levels far below County standards, and low levels of tannins. *Exhibit 11*. Although evidence was submitted that there have been notices of violation issued in the past with respect to the landfill activity, these issues appear to have been resolved. *Exhibit 54*. Moreover, such issues are outside of the Hearing Examiner review of the SUP request.
58. Much public comment focused on the Applicant's compliance history. Some compliance issues alleged include hours of operation that exceed code standards; violations of wetland requirements; drilling wells without a water right; and exceeding the 26-acre permit limit. *Exhibit 8 (see in particular 8-19; 8-46); Testimony of Mr. Packard*. The Black Hills Audubon Society requested that the project be subject to "regular and stringent compliance and environmental monitoring." *Exhibit 30, Attachment 38*.
59. The current mining operation is subject to a Department of Natural Resources (DNR) Surface Mine Reclamation Permit (Permit No. 70-011988). The permit is for 26 acres,

mined to a depth of 60 feet. The DNR has alleged several permit violations. Although the DNR permitting and enforcement process is separate from the local SUP process, and current compliance with DNR standards is not subject to Hearing Examiner review, the Black Hills Audubon Society and other interested parties questioned the Applicant's ability or willingness to comply with any SUP conditions. The Applicant has applied for a reclamation permit from the DNR for the proposed expansion. *Exhibit 12; Exhibit 20; Exhibit 39.*

60. Generally, numerous residents objected to the proposal and questioned its impacts on noise and air pollution, water quality and quantity for nearby wells and the Black River, health, property values, wildlife habitat, and traffic, both with respect to the proposed 88th Avenue Southwest access and any alternate access via Fairview Avenue. While some residents cited adverse noise, traffic, and dust impacts caused by current operations, others have not experienced such impacts. *Exhibit 1, Attachment u; Exhibit 4; Exhibit 6; Exhibit 10; Exhibit; Exhibit 8; Exhibit 30; Testimony of Ms. Atkinson; Testimony of Mr. Rhodes; Testimony of Mr. Simons; Testimony of Ms. Engels; Testimony of Mr. Rauser; Testimony of Ms. Jefferson; Testimony of Mr. Jenkins; Testimony of Mr. Sand; Testimony of Ms. Olson; Testimony of Ms. Tildt.*¹¹
61. Notice of the open record hearing was published in *The Olympian* on November 9, 2001, mailed to property owners within 2,600 feet of the site on November 6, 2001, and posted on-site on November 9, 2001. *Exhibit 1, Staff Report, page 5; Exhibit 1, Attachment a.*

CONCLUSIONS OF LAW

Jurisdiction

The Hearing Examiner is granted jurisdiction to hear and decide applications for Special Use Permits for gravel mining pursuant to TCC 2.06.010 and TCC 20.54.015.

Criteria

The Hearing Examiner may approve an application for a Special Use Permit only if the specific standards set forth in TCC 20.54.070 and the following general standards set forth in TCC 20.54.040 are satisfied:

1. Plans, Regulations, Laws. The proposed use at the specified location shall comply with the Thurston County Comprehensive Plan and all applicable federal, state, regional, and Thurston County laws or plans.
2. Underlying Zoning District. The proposed use shall comply with the general purposes and intent of the applicable zoning district regulations and subarea plans. Open space, lot, setback and bulk requirements shall be no less than that specified for the zoning

¹¹ The list of names and exhibits is not exhaustive, but is representative of the comments received.

district in which the proposed use is located unless specifically provided otherwise in this chapter.

3. Location. No application for a special use shall be approved unless a specific finding is made that the proposed special use is appropriate in the location for which it is proposed. This finding shall be based on the following criteria:
 - a. Impact. The proposed use shall not result in substantial or undue adverse effects on adjacent property, neighborhood character, natural environment, traffic conditions, parking, public property or facilities, or other matters affecting the public health, safety and welfare. However, if the proposed use is a public facility or utility deemed to be of overriding public benefit, and if measures are taken and conditions imposed to mitigate adverse effects to the extent reasonably possible, the permit may be granted even though the adverse effects may occur.
 - b. Services. The use will be adequately served by and will not impose an undue burden on any of the improvements, facilities, utilities, or services existing or planned to serve the area.
4. Time Limits.
 - d. Time Limit and Re-Review. Where the approval authority is the hearing examiner, there may be a condition to provide time limits for the use. If it is determined after review that the special use no longer meets the conditions set by the hearing examiner at the time of the initial approval, the use may be terminated, or such standards added as will achieve compliance with the original hearing examiner conditions.

Conclusions Based on Findings

1. The Applicant requested approval of a SUP for expansion of the mining operation at 4741 – 885th Avenue Southwest, Thurston County, Washington. It is the intent of the Applicant to expand the existing gravel mine (LTD-3-85) on-site from 26 acres to 151 acres; to replace a previously approved batch plant (LTD-3-85, Amendment); to add an asphalt hot mixing plant; and to resume concrete and asphalt recycling. *Finding of Fact No. 1.*
2. An Applicant for a SUP is required to satisfy the general and specific use standards contained in TCC 20.54.040 and 20.54.070, respectively. One of the general criteria is that the use must comply with “all applicable federal, state, regional, and Thurston County laws or plans.” *TCC 20.54.040(1)*. However, pursuant to TCC 20.54.050, the Hearing Examiner “may impose such additional conditions, safeguards and restrictions upon the proposed use as it may deem necessary in the public interest.” Thus, the Hearing Examiner may increase identified standards to ensure that the use will not have

substantial or undue adverse effects on adjacent property, neighborhood character, natural environment, traffic conditions or other matters set forth in TCC 20.54.040(3).

3. To be valid, conditions of SUP approval must:

1. not offend any provision of the zoning ordinance;
2. not require illegal conduct on the part of the permittee;
3. be in the public interest;
4. be reasonably calculated to achieve some legitimate objective of the zoning ordinance; and
5. not be unnecessarily burdensome or onerous to the landowner.

Woodinville Water District v. King County, 21 P.3d 309, 313 (2001).

4. Conditions of SUP approval must relate to zoning limitations on the use of the land and not to the detailed conduct of the Applicant's business. *Woodinville Water District*, 21 P.3d at 313. In *Woodinville Water District*, the court upheld a King County Conditional Use Permit (CUP) condition limiting the number of employees on site to the number analyzed in a traffic study. The condition did not violate the principle described above because it was designed to ensure that traffic impacts were adequately mitigated before additional expansion could occur. And, the employee limit was not absolute. Instead, it was the limit before additional CUP approval was needed. The conditions of the instant SUP are directly related to zoning limitations on the use of the land and ensure mitigation for impacts resulting from the proposed use of the site.
5. The proposed use would be in compliance with the Thurston County Comprehensive Plan.
 - a. The Comprehensive Plan designates a portion of the site as a Mineral Resource Land of Long-Term Commercial Significance. This designation is relevant because it establishes mineral extraction uses as a priority in an area. Some of the applicable Comprehensive Plan policies are to ensure that "the use of adjacent lands should not interfere with the continued use of the designated mining sites that are being operated in accordance with applicable best management practices" and to give designated lands "that are being operated in accordance with applicable best management practices and other laws and regulations increased protection from nuisance claims from landowners who have been notified of the presence of the long-term mineral extraction site." *Thurston County Comprehensive Plan, Natural Resource Lands, Goal 7, Policies 2 and 3*.

- b. The Comprehensive Plan designation of Mineral Resource Land is not essential for mineral extraction to occur on the entire site. Although TCC 20.54.070(21)(f) states that “an application for designation as mineral resource lands of long-term commercial significance *may* accompany an application for a special use permit for mineral extraction”, TCC 20.30B.010 makes clear that the Comprehensive Plan designation is not a necessary prerequisite to SUP approval. That section, after setting forth the purpose of the designation, sets forth that “[n]othing in this chapter shall be construed as prohibiting mineral extraction on nondesignated sites.” Thus, an Applicant may seek designation for the extra protections it provides, but need not for SUP approval.
- c. Chapter Three of the Comprehensive Plan (Natural Resource Lands) contains policies applicable to Mineral Resource Lands of Long-Term Commercial Significance that may also be applicable to mineral extraction on non-designated sites. These include allowing mineral extraction industries to locate where prime natural resource deposits exist (Goal 7, Policy 1); restoring mineral extraction sites as the site is being mined (Policy 4); ensuring that extraction industries do not adversely impact adjacent or nearby land uses, public health or safety, or alter significant geologic features such as mima mounds (Policies 7 & 8); protecting areas where existing residential uses predominate against intrusion by mineral extraction operations (Policy 9); and ensuring that extraction activities do not negatively affect or endanger surface and ground water flows and quality (Policy 10).
- d. The proposal is consistent with the Natural Resource Lands policies. Restoration of the site would be pursuant to a DNR-approved reclamation plan. Compliance with the OAPCA Notice of Construction and state noise standards would minimize impacts to nearby residential land uses. Due to the geology of the area, the direction of groundwater flows, and proposed storm drainage improvements, the proposal is not expected to endanger ground and surface water flows or quality. However, quarterly groundwater monitoring would ensure that applicable water quality standards are met. *Findings of Fact Nos. 10, 11, 13, 15, 26-37, 44-49, 51-54, 56, and 59.*
- e. The proposal is consistent with the Land Use Chapter of the Comprehensive Plan (Chapter 2), which describes rural areas carrying the Residential – One Unit Per Five Acres designation as follows:

Primary land uses in the one unit per five acre areas are resource-oriented (farming, forestry, *mineral extraction*) and open space. Residential use may be limited due to physical land capability constraints.

Thurston County Comprehensive Plan, page 2-15. Findings of Fact Nos. 1-3.

- f. Chapter Nine of the Comprehensive Plan (Natural Environment) includes policies that are applicable to the proposal. These include protecting wildlife habitat for important species and protecting unique and rare habitats (Goal 1, Objective B, Policy 4); ensuring that land uses that produce air pollutants and odors comply with adopted air quality standards for the region (Goal 1, Objective C, Policy 1); providing for the peace and quiet of residential neighborhoods through the use of screens, open space or other buffers and noise standards (Goal 1, Objective C, Policy 2); ensuring that land uses that produce noises comply with the Washington State Noise Control Act and Thurston County Laws (Goal 1, Objective C, Policy 3); ensuring that facilities that store, process or use hazardous materials use best management practices for the protection of ground and surface waters and be periodically monitored for compliance (Goal 1, Objective E, Policy 8); recognizing the hydrologic continuity between ground and surface water (Goal 2, Objective A, Policy 3); protecting groundwater aquifers, fish and wildlife habitat, and recreational functions of streams (Goal 2, Objective B, Policy 1); protecting streams from adverse impacts of activities occurring adjacent to their waters or within their watersheds by avoiding degradation of water quality (Goal 2, Objective C, Policy 1); and maintaining the quality and quantity of runoff entering wetlands and streams, ensuring that stormwater systems are adequately maintained, and preventing on and off-site erosion and sedimentation (Goal 2, Objective F, Policies 3, 4 & 6). Many of these requirements have been incorporated into the Special Use and Mineral Extraction Code standards.
- g. The proposal is consistent with the Natural Environment policies.
- i. In applying the Natural Environment policies to the proposal, consideration must be given to the Mineral Resource Lands of Long-Term Commercial Significance designation. The designation is a determination that gravel mining is an appropriate use for the site, despite the significant environmental amenities contained within the Black River area. *Finding of Fact No. 3.*
- ii. Due to the direction of groundwater flow in the area (east to west) and the low permeability of the Vashon till, neither the water quality or water quantity of Ashley Creek, the Class II wetland, or nearby wells should be significantly affected by stormwater runoff from the site or the creation of the 75-acre lake during the first three phases of operation as proposed by the Applicant. *Findings of Fact Nos. 24-54.* However, the impact to groundwater during the final three proposed phases of the operation is unclear. With no boring test results, *Finding of Fact No. 8*, there is no conclusive evidence of soil conditions including the sand and gravel layers under the wetland and the eastern boundary. As a result, there is no conclusive evidence on water quality and water drawdowns that would result from the final phases of the operation.-

- iii. Insufficient evidence was provided that Ashley Creek provides habitat for endangered species and especially the Oregon Spotted Frog. There has been no documentation of the Oregon Spotted Frog in Ashley Creek, and a condition of approval requiring the Applicant to continue searching for the frog would be unnecessarily burdensome because the frogs are extremely difficult to locate even with sophisticated equipment. Whatever current habitat is provided by Ashley Creek would be adequately protected with a 200-foot buffer, provided that erosion control measures are followed in accordance with DNR and DOE standards. The important habitat west of the site would be protected by the 300-foot buffer and the ridge in the northwest corner of the site. *Findings of Fact Nos. 32-43 and 56.*
 - iv. The water quality of the Black River would be protected with the proposed storm drainage improvements. Although evidence was provided that there is some uncertainty with respect to the effectiveness of typical treatment facilities, the appropriate remedy is regular monitoring. The County has adopted the requirements of the Drainage Design and Erosion Control Manual, and only requires that the Applicant satisfy the Manual and any applicable water quality standards. The SUP hearing was not an appropriate forum to put the science of the Manual, or facilities mandated by the Manual, on trial. Because the Applicant proposes a storm drainage system that would comply with the Manual, any issue with respect to effectiveness should be resolved through the conditions requiring water quality monitoring. *Findings of Fact Nos. 52-56.*
 - v. With conditions established by OAPCA, the proposal would comply with adopted regional air quality standards. Although credible evidence was provided that even minute amounts of pollutant could adversely affect fish and other species, no evidence was provided regarding the amount of pollutants that would be ingested by those species. The Applicant has the burden of proof in a Special Use Permit request; however, the level of review contemplated by the Black Hills Audubon Society would be more appropriate in the context of an EIS. The MDNS issued for the proposal contains conditions that protect the environment, and it was not appealed. *Findings of Fact Nos. 10-14.*
 - vi. Noise from the facility would comply with county and state standards provided that noise attenuation measures are followed and the hours of operation are limited in accordance with ordinance standards. *Findings of Fact Nos. 26-31.*
6. With conditions, the proposed use would comply with applicable federal and state standards on air and water quality, noise, and reclamation. Environmental review was conducted pursuant to SEPA and an MDNS was issued. Although testimony was taken regarding the Applicant's compliance history, the existing permit requirements were not

the subject of the SUP hearing. Sufficient evidence was provided to demonstrate that the proposal can comply with applicable standards. It is the responsibility of the agencies with jurisdiction to enforce the standards if necessary. *Findings of Fact Nos. 3, 7, 10-13, 26-31, 45, 53, 54, 58, and 59.*

7. With conditions, the proposed use would comply with the requirements of the Mineral Extraction Code.
 - a. The Applicant has an approved spill prevention plan on file with the County. *Finding of Fact No. 54.*
 - b. Fuel storage would comply with Uniform Fire Code standards. At the concrete plant, trucks would be rinsed on a paved surface and the runoff would be recycled or treated prior to discharge into the infiltration pond. *Findings of Fact Nos. 46, 52, and 54.*
 - c. The storm drainage system would comply with the Drainage Design and Erosion Control Manual. *Finding of Fact No. 52.*
 - d. Although the mining activities are not expected to adversely affect the water quality of nearby wells, TCC 17.20.080 requires the Applicant to remedy any diminishment of water quality below state standards. *Finding of Fact No. 44.*
 - e. The Applicant would be required to maintain 88th Avenue Southwest pursuant to a Haul Road agreement. However, the narrow roadway may present a safety risk with the increase in truck traffic proposed. A condition is needed to ensure that the standards outlined in TCC 17.20.050(c) are satisfied. *Findings of Fact Nos. 23 and 25.*
 - f. Emissions from the facility would comply with state standards. The Applicant has received OAPCA preliminary construction approval. *Findings of Fact No. 13.*
 - g. Noise generated by the facility is expected to satisfy state and County standards. Pursuant to TCC 17.20.110, the noise levels must be monitored "at least quarterly after the initiation of the mining activity, during normal operating conditions and periods, and until or unless the health department determines that such monitoring is not necessary." A condition is needed to set a schedule for noise monitoring that takes into consideration the peak production seasons and anticipated production increases over the next 20 years. On-site equipment would be muffled and equipped with ambient-sensitive back-up alarms pursuant to TCC 17.20.110(B). *Findings of Fact Nos. 17, 26-31.*

- h. The hours of operation would comply with TCC 17.20.115. Allowing nighttime asphalt production would conflict with subsection (c) of the ordinance and would conflict with OAPCA conditions prohibiting "around-the-clock" asphalt production. *Findings of Fact Nos. 13 and 16.*
 - i. Berms would be installed along the east and south sides of the mine, and fencing would be installed along the wetland buffer. *Findings of Fact Nos. 29 and 35.*
 - j. Reclamation of the site would be pursuant to a reclamation plan approved by DNR. *Finding of Fact No. 59.*
 - k. Pursuant to TCC 17.20.160, a condition is required to ensure that the Applicant submits to County inspection of the site prior to commencing expansion activities.
 - l. The MDNS issued for the proposal contains groundwater monitoring requirements. Condition No. 15 requires both water quality and water quantity monitoring. *Finding of Fact No. 54.*
 - m. The purposes of the Mineral Extraction Code would not be furthered by a setback reduction. The Black River Unit surrounds the property on three sides and includes the Hard Rock Mining Company site. A setback reduction would conflict with the USFW's conservation efforts. *Findings of Fact Nos. 6 and 9.*
 - n. Pursuant to the MDNS issued for the proposal, the berm along the eastern property line would be landscaped to prevent erosion. *Finding of Fact No. 35.*
 - o. Pursuant to TCC 17.20.280, noncompliance with the provisions of the mineral extraction code may result in civil penalties.
8. Mineral extraction is allowed in the RRR 1/5 zone upon approval of a SUP. With conditions, the proposal would comply with the use-specific standards set forth in TCC 20.54.070. Pursuant to TCC 20.54.070(21)(a), asphalt production is a permitted accessory use to mineral extraction. It appears that the submittal requirements contained in subsection (c) have been satisfied. As discussed in Conclusion No. 5, designated mineral land status is not required for SUP approval. The only remaining issue is the extent of permit review. TCC 20.54.070(21)(e) specifies that "any permit issued pursuant to this chapter shall be reviewed by the approval authority no less frequently than every five years from the date of the decision to approve the permit. The approval authority shall determine the frequency of the permit review. At the time of such review, the approval authority may impose additional conditions upon the operation if the approval authority determines it is necessary to do so to meet the standards of this chapter [TCC 20.54], as amended." In addition, TCC 20.54.040(4)(d) authorizes the Hearing Examiner to review SUPs for compliance with permit conditions.

9. Although the Applicant argued that an open record hearing before the Hearing Examiner at five-year intervals pursuant to TCC 20.54.070(21)(e) would violate RCW 36.70B, such a review would be consistent with RCW 36.70B. There would be no conflict or overlap between the processes because it would be the same approval authority, and the review would be limited to previously identified standards and conditions. Due to the environmental issues that are at stake, however, review in less than five years is appropriate.
10. With conditions, the proposed use would be appropriate in the location for which it is proposed. The site is an existing gravel mine that has been designated, at least in part, as a Mineral Resource Land of Long-Term Commercial Significance. *Finding of Fact No. 3.*
 - a. Although the proposal would have impacts on adjacent property, neighborhood character, natural environment and traffic conditions, such impacts would not be "substantial" or "undue" according to the evidence that was submitted. The neighborhood character is already defined as including gravel mining operations, both on the Quality Rock site and the adjacent Hard Rock Mining Company site. Although the amount of traffic would increase, the increase would fall within acceptable LOS standards. The proposal would comply with state air quality standards, based on asphalt production that is nearly double the amount that is proposed. The noise generated by increased truck traffic would not exceed federal guidelines, and would represent only a moderate increase over existing conditions. *Findings of Fact Nos. 4, 6, 8, 10-60.*
 - b. The use would not impose an undue burden on facilities, utilities or services.

DECISION

Based upon the preceding Findings of Fact and Conclusions of Law, the request for approval of a Special Use Permit to expand an existing gravel mine, replace a concrete batch plant, construct a hot mix asphalt plant, and resume concrete and asphalt recycling, as depicted on project plans labeled Exhibit 1, Attachment d, is **GRANTED**. The approval is granted for the first three phases and is subject to the following conditions:

- A. The Applicant shall continue to comply with the conditions established through LTD-3-85 and LTD-3-85-Amendment (Exhibit 1, Attachments i and j).
- B. All requirements set forth in the Thurston County Environmental Health Department comment letters (Exhibit 1, Attachments o and p) and the Thurston County Roads and Transportation Services memoranda (Exhibit 1, Attachments l, m and n) shall be met prior to commencing mining activities within the expansion area.

- C. All requirements set forth in the October 4, 2001 Mitigated Determination of Nonsignificance (Exhibit 1, Attachment h) shall be met. None of the MDNS conditions shall be construed as authorizing activities that exceed the limits set forth in the Thurston County Mineral Extraction Code (TCC Chapter 17.20).
- D. The minimum setback from all property lines shall be 100 feet.
- E. The operation of all facilities on-site shall comply with the Thurston County Mineral Extraction Code (TCC Chapter 17.20).
- F. The hours of operation shall be limited to the Mineral Extraction Code standard of 7:00 a.m. to 7:00 p.m., Monday through Saturday. The exceptions set forth in TCC 17.20.115(C) shall apply.
- G. The access to the site shall comply with County and state road standards as specified in TCC 17.20.090. This ordinance may require road improvements to 88th Avenue Southwest. If alternate access is chosen to satisfy this requirement, the SUP proceeding shall be reopened for the limited purpose of considering impacts associated with the alternate access and to adjust conditions of approval accordingly.
- H. The speed limit for truck traffic on 88th Avenue Southwest shall be 25 miles per hour. The Applicant shall require that all of its truck drivers be instructed on the driving condition of the road and the speed limit.
- I. The Applicant shall file an updated Haul Road Agreement with the Thurston County Roads and Transportation Services Department to reflect the increased truck traffic.
- J. The Applicant shall comply with all conditions set forth in the OAPCA Order of Approval for Notice of Construction (01NOC116) and any other applicable OAPCA regulations.
- K. The Applicant shall comply with all local, state and federal permits and regulations.
- L. The Applicant shall obtain a solid waste handling permit prior to the recycling of asphalt and concrete.
- M. The Applicant shall submit a copy of the Washington State Department of Natural Resources approved reclamation plan to Thurston County Development Services prior to any mining activity within the expansion area.
- N. The floor of the excavation area shall be designed and maintained in such a manner that stormwater discharge will flow to the sedimentation pond.
- O. All turbid water and storm drainage shall be retained within the sedimentation pond as depicted on the site plan.

- P. Measured daytime noise levels shall not exceed the following levels, as established in WAC 173-60-040:

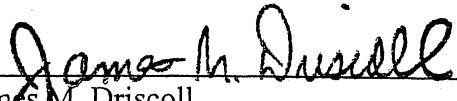
Adjacent to Hard Rock Mining Company property: 60 dBA
Adjacent to all other property lines and Burlington
Northern right-of-way: 55 dBA

Between 10:00 p.m. and 7:00 a.m., all measured noise levels shall be 10 dBA lower than the levels stated above. If noise monitoring reveals noise levels along any property line exceeded the limits set forth in WAC 173-60-040, the Applicant shall be required to mitigate with berms or other approved methods.

- Q. Noise levels shall be monitored at the property boundaries and at the easement boundary of the Burlington Northern right-of-way at least quarterly during normal operating conditions and during both daytime and nighttime hours. When and if the Health Department determines that quarterly monitoring is no longer necessary (TCC 17.20.110), the monitoring shall continue at least on a yearly basis, with the sound measurement taken during normal operating conditions during the peak season (June – November).
- R. A 20-foot high noise berm shall be installed in the eastern portion of the property. The noise berm shall extend to the south property line, be located outside the wetland buffers, and run parallel to the west side of the Burlington Northern Railroad easement that crosses the southeast corner of the property. The berm may be located within the 100-foot setback (TCC 17.20.230) and shall be landscaped to prevent erosion.
- S. All equipment used on the site shall be equipped with mufflers and properly maintained to reduce noise.
- T. All loaders and dozers shall be equipped with ambient-sensitive back-up alarms.
- U. The operation of facilities on the site shall be consistent with the site plan as approved by the Hearing Examiner (Exhibit 1, Attachment d).
- V. Groundwater monitoring shall be in accordance with the requirements of the October 4, 2001 Mitigated Determination of Nonsignificance (Exhibit 1, Attachment h).
- W. The Applicant shall submit to a County inspection to ensure compliance with Mineral Extraction Code requirements prior to commencing activities within the expansion area.
- X. The Special Use Permit for the first three phases shall be reviewed by the Hearing Examiner within three years of the effective date of the permit to determine whether the conditions of approval have been complied with and whether additional conditions are needed to satisfy the Mineral Extraction Code. Thereafter, the SUP shall be reviewed by the Hearing Examiner every five years.

- Y. The last three phases of the operation shall be subject to further review including detailed analysis of the impact of groundwater to the site, the aquifer and the Black River. This information shall be presented at a public hearing at the appropriate time.

Decided this 5th day of April 2002.


James M. Driscoll
Hearing Examiner for Thurston County

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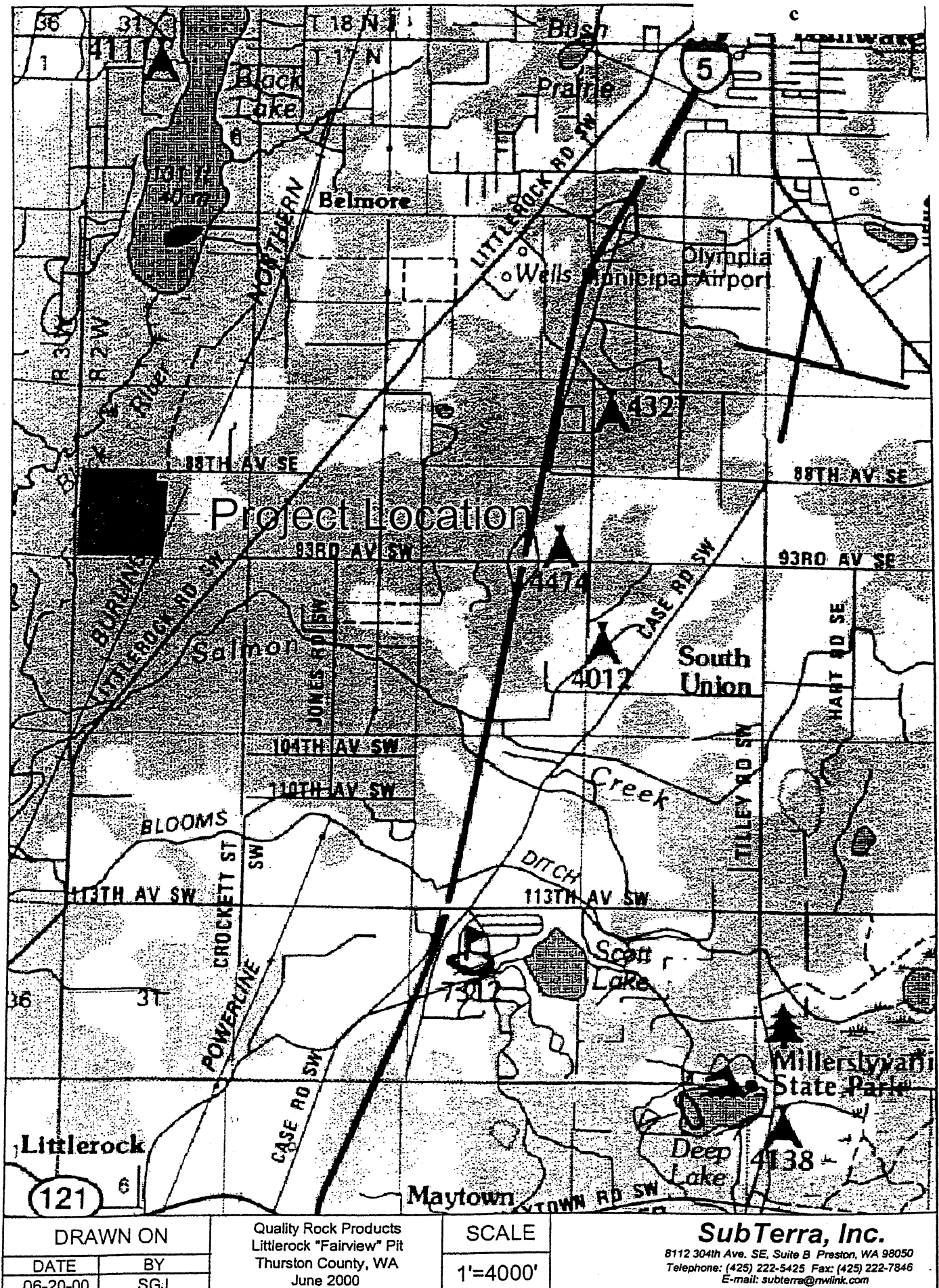
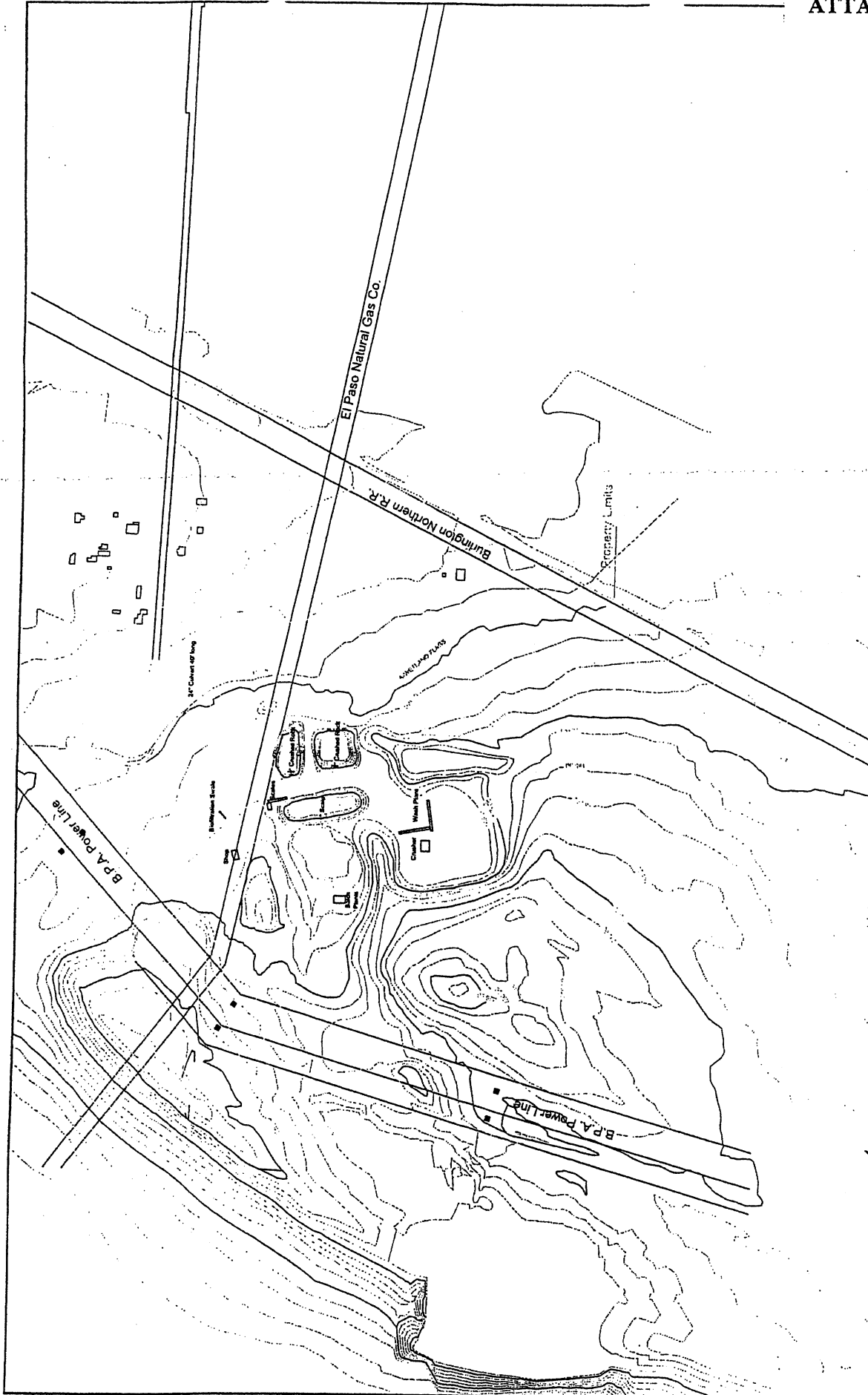
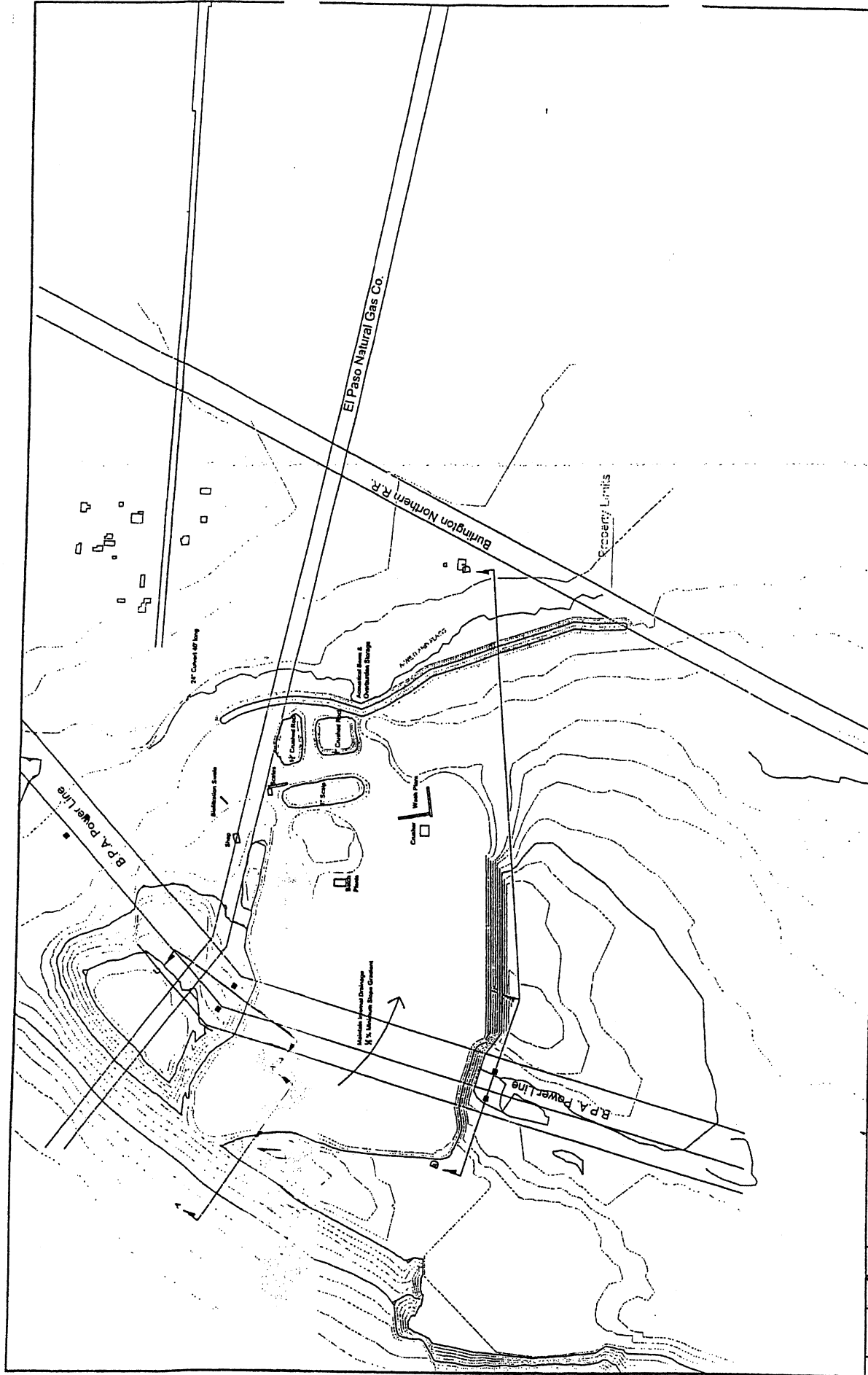


Figure 1

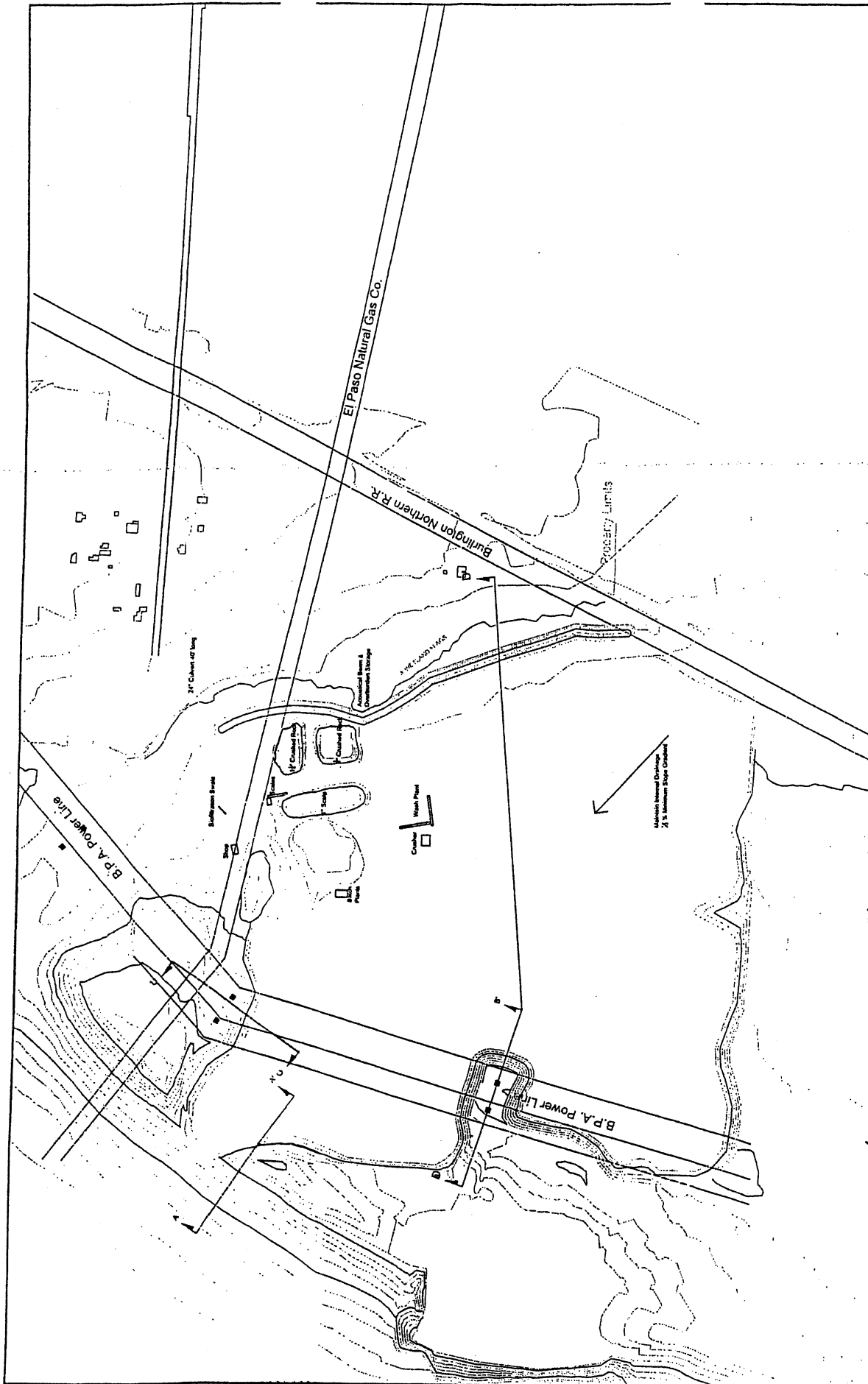
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No.		Date		By		Appd.		Revisions	



				<div>SubTerra, Inc. 8112 340th Ave. SE, Suite B Puyallup, WA 98958 Telephone: (253) 225-5415 E-mail: subterra@subterra.com Fax: (253) 225-7946</div>		Quality Rock Products Little Rock "Fairview" Pit Thurston County, Washington	
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THURSTON COUNTY
PROCEDURE FOR RECONSIDERATION AND APPEAL
OF HEARING EXAMINER DECISION TO THE BOARD

NOTE: THERE MAY BE NO EX PARTE (ONE-SIDED) CONTACT OUTSIDE A PUBLIC HEARING WITH EITHER THE HEARING EXAMINER OR WITH THE BOARD OF THURSTON COUNTY COMMISSIONERS ON APPEALS (Thurston County Code, Section 2.06.030).

If you do not agree with the decision of the Hearing Examiner, there are two (2) ways to seek review of the decision. They are described in A and B below. Unless reconsidered or appealed, decisions of the Hearing Examiner become final on the 15th day after the date of the decision.* The Hearing Examiner renders decisions within five (5) working days following a request for reconsideration unless a longer period is mutually agreed to by the Hearing Examiner, applicant, and requester.

A. RECONSIDERATION BY THE HEARING EXAMINER

1. Any aggrieved person or agency who disagrees with the decision of the Examiner may request reconsideration. All reconsideration requests must include a legal citation and reason for the request. The Examiner shall have the discretion to either deny the motion without comment or to provide additional Findings and Conclusions based on the record.
2. Written request for reconsideration and the appropriate fee must be filed with the Development Services Department **within ten (10) days of the written decision**. The form is provided for this purpose on the opposite side of this notification.

B. APPEAL TO THE BOARD OF THURSTON COUNTY COMMISSIONERS

1. Appeals may be filed by any aggrieved person or agency directly affected by the Examiner's decision. The form is provided for this purpose on the opposite side of this notification.
2. Written notice of appeal and the appropriate fee must be filed with the Development Services Department **within fourteen (14) days of the date of the Examiner's written decision**. The form is provided for this purpose on the opposite side of this notification.
3. An appeal filed within the specified time period will stay the effective date of the Examiner's decision until it is adjudicated by the Board of Thurston County Commissioners or is withdrawn.
4. The notice of appeal shall concisely specify the error or issue which the Board is asked to consider on appeal, and shall cite by reference to section, paragraph and page, the provisions of law which are alleged to have been violated. Issues which are not so identified need not be considered by the Board. The notice may be accompanied by a written memorandum which the appellant may wish considered by the Board. The memorandum shall not include the presentation of new evidence and shall be based only upon facts presented to the Examiner.
5. Notices of the appeal hearing will be mailed to all parties of record who legibly provided a mailing address. This would include all persons who (a) gave oral or written comments to the Examiner or (b) listed their name as a person wishing to receive a copy of the decision on a sign-up sheet made available during the Examiner's hearing.
6. Unless all parties of record are given notice of a trip by the Board of Thurston County Commissioners to view the subject site, no one other than County staff may accompany the Board members during the site visit.

C. STANDING All reconsideration and appeal requests must clearly state why the appellant is an "aggrieved" party and demonstrate that standing in the reconsideration or appeal should be granted.

D. FILING FEES AND DEADLINE If you wish to request a reconsideration or appeal this determination, please do so in writing on the back of this form, accompanied by a nonrefundable fee of **\$245.00** (for a request for reconsideration) or **\$480.00** (for an appeal). Any request for reconsideration or appeal must be **received** in the Permit Assistance Center on the second floor of Building #1 in the Thurston County Courthouse complex no later than 5:00 p.m. on April 19, 2002 (14 days for an appeal) or April 15, 2002 (10 days for a reconsideration). Postmarks are not acceptable. If your application fee as well as completed application form is not filed by this time, you will be unable to request a reconsideration or appeal this determination. This deadline may not be extended.

* Shoreline Permit decisions are not final until a 21-day appeal period to the state has elapsed following the date the County decision becomes final.

☐ Check here for: **RECONSIDERATION OF HEARING EXAMINER DECISION**

THE APPELLANT, after review of the terms and conditions of the Hearing Examiner's decision hereby requests that the Hearing Examiner take the following information into consideration and further review under the provisions of Chapter 2.06.060 of the Thurston County Code:

(If more space is required, please attach additional sheet.)

☐ Check here for: **APPEAL OF HEARING EXAMINER DECISION**

TO THE BOARD OF THURSTON COUNTY COMMISSIONERS COMES NOW _____ on this _____ day of _____, 2002, as an APPELLANT in the matter of a Hearing Examiner's decision rendered on _____, 2002, by _____ relating to _____.

THE APPELLANT, after review and consideration of the reasons given by the Hearing Examiner for his decision, does now, under the provisions of Chapter 2.06.070 of the Thurston County Code, give written notice of APPEAL to the Board of Thurston County Commissioners of said decision and alleges the following errors in said Hearing Examiner decision:

Specific section, paragraph and page of regulation allegedly interpreted erroneously by Hearing Examiner:

1. Zoning Ordinance _____
2. Platting and Subdivision Ordinance _____
3. Comprehensive Plan _____
4. Critical Areas Ordinance _____
5. Shoreline Master Program _____
6. Other: _____

(If more space is required, please attach additional sheet.)

AND FURTHERMORE, requests that the Board of Thurston County Commissioners, having responsibility for final review of such decisions will upon review of the record of the matters and the allegations contained in this appeal, find in favor of the appellant and reverse the Hearing Examiner decision.

STANDING

On a separate sheet, explain why the appellant should be considered an aggrieved party and why standing should be granted to the appellant. This is required for both Reconsiderations and Appeals.

Signature required for both Reconsideration and Appeal Requests

APPELLANT NAME PRINTED _____

SIGNATURE OF APPELLANT _____

Address _____

Phone _____

Please do not write below - for Staff Use Only:

Fee of ☐ \$245.00 for Reconsideration or ☐ \$480.00 for Appeal Received (check box): Initial _____ Receipt No. _____
Filed with the Development Services Department this _____ day of _____, 2002.

Appendix 6



COUNTY COMMISSIONERS

Cathy Wolfe
District One


Diane Oberquell
District Two

Robert N. Macleod
District Three

DEVELOPMENT SERVICES

MEMORANDUM

TO: Parties of Record

FROM: Cami Olson 
Land Use Clerk

DATE: August 12, 2003

SUBJECT: SUPT 000788 Quality Rock

Attached is a copy of the Decision of the Board of Thurston County Commissioners relating to the above-mentioned case.

Any appeal of this land use decision must be filed in Superior Court pursuant the Land Use Petition Act, RCW Chapter 36.70C, within 24 days of the mailing of this decision.

Please contact me at (360) 754-3355 extension 6348 if you have questions regarding this Decision.

\\COMMON\\zoning\\LU\\APPEALS\\DECISION\\2003\\000788.MEMO.doc

BEFORE THE BOARD OF COUNTY COMMISSIONERS
THURSTON COUNTY, WASHINGTON

In Re the Matter of,

Quality Rock

NO. SUPT 000788

DECISION

THIS MATTER came before the Board of County Commissioners on August 4, 2003 for the second time pursuant to an appeal by the Black Hills Audubon Society (Audubon Society). Last summer the Board vacated the hearing examiner's decision dated April 5, 2002 approving a special use permit (SUP) to expand the existing 26 acre mine to a 151 acres, add an asphalt plant and resume concrete productions.. The Board remanded the matter back to the hearing examiner to take further evidence on: (1) whether the uses approved in the 1985 and 1986 permits (mining on 26 acres and concrete production) had been abandoned (2) the proposed gravel mining expansions' impact to the groundwater, aquifer and the Black River; (3); what portion of the 151 acre site was designated as a mineral resource land of long-term commercial significance; and (4) traffic safety issues;

On May 30, 2003, the hearing examiner issued a second decision approving the SUP. In this decision, the hearing examiner determined (1) the 1985 and 1986 permits had not been abandoned ; (2) the water quality impacts to the groundwater, aquifer and the Black River had been adequately addressed; (3) 26 acres of the 151 acre parcel had been designated as a mineral resource land of long-term significance; and (4) due to safety issues all new truck traffic was prohibited on 88th avenue. The hearing examiner approved the special use permit with a number of conditions. On June 13, 2003, the Audubon Society timely filed a second appeal

The Board reviewed the hearing examiner's decision, the evidence presented to the hearing examiner, and listened to the audiotapes of the hearing.

Based on the above record, the Board determined that the (1) the 1985 and 1986 permits were still valid and had not been abandoned; and (2) the proposed location for the gravel mine is *not* appropriate due to the gravel mining operations' significant adverse impacts on the surrounding sensitive environment; (3) the proposed gravel mine is not consistent with the comprehensive plan policies on the natural environment ; and (3) if the SUP is approved on appeal in superior court all truck traffic on 88th avenue should be prohibited due to safety issues.

Specifically the Board determined as follows:

I. 1985 and 1986 Permits

The 1985 and 1986 permits are valid because the operative term is abandon. This term as all parties agree has an element of intent, and it is clear from the record, the original owner did not intend to abandon the site as a mineral extraction site.

II. Water Quality Impacts to the Black River and surrounding Area

The hearing examiner made the following factual determinations and legal conclusions:

- The subject property is a gently rolling glacial upland that is on the east side of the Black River Valley. The Black River is considered to be one of the last large, intact riparian systems in the Puget Sound area and the U.S. Fish & Wildlife Service is actively acquiring properties along portions of the Black River to preserve the existing wetland system and the habitat for migratory birds and fish and other species. The authorized boundary of the Black River Refuge surrounds the subject property. HE Decision No. 1 FF No. 6
- Groundwater beneath the site flows from east to west away from Ashley Creek and neighboring wells but toward the Black River. HE Decision No. 1 FF No. 44
- The Black River is water quality impaired under the Clean Water Act. Concern was raised that the proposal would further reduce water flows and thus exacerbate the water quality problems particularly during the dryer summer months when production would be at its peak. HE Decision No. 1 FF No. 45
- The Ground Water section of the County health Department has determined that the existing operations and proposed expansion does pose a significant risk to ground and surface water resources. The proposed mitigation is to install monitoring wells HE Decision No. 1 FF No. 54
- At the mine site the Qva has formed an aquifer with moderate to high permeability. The proposed mining activity below the water table would result in the creation of a 75-acre lake. HE Decision No. 2:FF No. 2
- The county hydrologist anticipates based on computer modeling that the drawdown of the aquifer caused by mining activity would not exceed one inch. HE Decision No. 1 FF No. 49
- Changes to the site from the till stripping and creation of the lake were modeled. HE Decision No. 2:FF No. 13.
- The model reflects that the average annual evaporation from the pit lake would exceed the historic evapotranspiration rate by 3.7 inches per year. HE Decision No. 2:FF No. 15.
- The estimated change in groundwater levels at neighboring wells ranged from a drop of .8 feet to a drop of 1.7 feet. However the magnitude of water level changes may be as much as twice as that shown due to the modeling assumptions. HE Decision No. 2:FF No. 17.
- Ms. Romero, a hydrology expert considered the drawdown to be significant. HE Decision No. 2:FF No. 18
- The impact to groundwater during the final three proposed phases of the operation is unclear. HE Decision No. 1 Conclusion 5(g)(ii).
- Condition Y of the hearing examiner's first decision and condition V. of the hearing examiner's second decision states that "The last three phases of the operation shall be subject to further review including detailed analysis of the impact of groundwater to the site, the aquifer and the Black River

These facts clearly establish that there is a hydraulic link between the groundwater on site

and to the water quality impaired Black River. Further these facts show the proposal does pose a significant risk to groundwater. Finally the hearing examiner did not make any findings on impacts to the Black River, despite the Board's earlier remand decision to study the impacts to the Black River.

It is clear from the hearing examiner's own findings that predictions on impacts to groundwater are only predictions and the actual effects on site will be and can be quite differently. For example, Bob Mead in his initial assessment predicted a drawdown of 1 inch to the aquifer and nearby wells. Another expert, Nadine Romero predicted that the drawdown would be closer to two feet. After further studies on site by the applicant it was established that the drawdown would be about 1 and a half feet. Further, the applicant's own consultant acknowledged in his supplemental report, exhibit 66, that "the pattern of drawdown. . . indicated by the modeling results is not sensitive to on site conditions and the magnitude of water level changes may be as much as twice that shown. . . as a result of in e increase in hydraulic gradient across the mine, as compared to the average gradient used for modeling.

The proposed mitigation to install monitoring wells and study in five years does not sufficiently mitigate the undisputed impacts of the proposed project due to the sensitivity of the Black River and surrounding area.

As a result of the hearing examiner's own findings, and lack of findings regarding impacts to the Black River, the hearing examiner's ultimate conclusion that the proposed location of the project is appropriate and that the project will not have an adverse impact on the surrounding environment, including the Black River, and community is not supported by the evidence in the record.

Furthermore the proposed project is not consistent with the following comprehensive plan policies on the natural environment.

Protecting wildlife habitat for important species and protecting unique and rare habitats (Goal 1, Objective B, Policy 4); recognizing the hydrologic continuity between ground and surface water (Goal 2, Objective A, Policy 3); protecting groundwater aquifers, fish and wildlife habitat, and recreational functions of streams (Goal 2, Objective B, Policy 1); protecting streams from adverse impacts of activities occurring adjacent to their waters or within their watersheds by avoiding degradation of water quality (Goal 2, Objective C, Policy 1).

III. TRAFFIC SAFETY ISSUES

The hearing examiner took additional evidence on whether 88th Avenue, could comply with the certain county and state road standards and made the following finding:

88th Avenue SW has a pavement width of 20 feet and no shoulders. In order to comply with County standards for local access roads, the road would have to be widened two feet for shoulders. Ten-foot wide clear zones (unobstructed right-of-way or easement) would have to be established. Currently only portions of the road have clear zones. In addition, the intersection of 88th Avenue SW and Littlerock Road does not have sufficient turning radius to satisfy AASHTO standards for truck traffic (Chapter 9). Trucks turning south onto Littlerock Road occupy the entire road during the turn. HE Decision No. 2:FF No.26.

Despite this finding the hearing examiner allowed the applicant to use 88th Avenue for up to 70 truck trips per day. Hearing Examiner's Decision on Remand, condition F. It is undisputed the

applicant cannot meet the applicable road standards for the 88th Avenue access. Furthermore, use of 88th Avenue for truck traffic presents undisputed safety issues that cannot be mitigated by the applicant. One of the more significant safety issues is that trucks turning south onto Littlerock Road (the majority of the trucks will be heading south) will occupy the entire road during the turn.

If the SUP is approved on appeal Condition F should be modified to prohibit all truck traffic on 88th Avenue.

IT IS HEREBY ORDERED AS FOLLOWS:

The Hearing Examiner's Decision on Remand dated May 30, 2003 is reversed and the SUP 000788 is denied.

DATED this 11 day of August, 2003.

ATTEST: ,

Roberta J. Bryman
Clerk of the Board

BOARD OF COUNTY COMMISSIONERS
Thurston County, Washington

Cathy Delfino
Chairman
Glenn Cheyenne
Commissioner
Robert H. MacLeod
Commissioner

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COURT OF APPEALS

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COURT OF APPEALS
OF THE STATE OF WASHINGTON
DIVISION II

NO. 34128-0-II

THURSTON COUNTY, WASHINGTON, a municipal corporation and
political subdivision of the State of Washington, and BLACK HILLS
AUDUBON SOCIETY, a non-profit corporation,

Appellants/Cross-Respondents,

v.

QUALITY ROCK PRODUCTS, INC., a Washington corporation, and
EUCON CORPORATION, an Idaho corporation,

Respondent/Cross-Appellants.

CERTIFICATE OF SERVICE

Michael Simon, WSBA #10931
LANDERHOLM, MEMOVICH,
LANSVERK & WHITESIDES, P.S.
805 Broadway Street, Suite 1000
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Vancouver, WA 98666-1086
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Dawn F. Reitan, WSBA #23148
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777 – 108th Avenue N.E., Suite 1900
P.O. Box C-90016
Bellevue, WA 98009-9016
(425) 455-1234
(425) 635-7720 (fax)

The undersigned hereby certifies as follows:

1. My name is Linda Gill. I am a citizen of the United States, over the age of eighteen (18) years, a resident of the State of Washington, and am not a party of this action.

2. On the 13th day of July, 2006, copies of the ***CORRECTED*** Respondents/Cross-Appellants Quality Rock Products, Inc.'s and Eucon Corporation's Response to Appeal from Thurston County and Black Hills Audubon Society and Brief on Cross-Appeal were delivered via e-mail and via first class United States Mail, postage prepaid, to the following persons:

Attorneys for Appellant/Cross-Respondent Thurston County:

Elizabeth Petrich
Deputy Prosecuting Attorney
Thurston County Prosecuting Attorney's Office
2424 Evergreen Park Drive SW, Suite 102
Olympia, WA 98502
E-Mail: petrice@co.thurston.wa.us

Attorneys for Appellant/Cross-Respondent Black Hills Audubon Society:


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***Attorneys for Respondents/Cross-Appellants Quality Rock
Products, Inc. and Eucon Corporation:***

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E-Mail: DReitan@insleebest.com

**I CERTIFY UNDER PENALTY OF PERJURY UNDER
THE LAWS OF THE STATE OF WASHINGTON THAT THE
FOREGOING IS TRUE AND CORRECT.**

DATED: July 13, 2006
At: Vancouver, Washington



Linda Gill